CANADA

Report by

THE TARIFF BOARD

Relative to the Investigation Ordered by the Minister of Finance respecting

BASIC IRON AND STEEL PRODUCTS

•

Reference No. 118

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Reference No. 118

OTTAWA,
February 28, 1957

The Honourable,
The Minister of Finance,
Ottawa

Reference No. 118

Dear Mr. Minister:

In accordance with your direction to the Tariff Board to conduct an inquiry regarding certain basic forms and products of Iron or Steel,—

I have the honour to transmit herewith, for tabling in Parliament under the provisions of Section 6 of the Tariff Board Act, the Report of this Board in connection with the aforesaid Reference, in English and in French. A copy of the transcript of the information secured at various public hearings accompanies this Report.

Yours faithfully,

H. B. McKINNON
Chairman

Foreword

In connection with the Inquiry conducted in respect of Reference No. 118, Basic Iron and Steel Products, the Tariff Board desires to record its appreciation of the co-operation extended by the steel-producing and the steel-consuming industries of Canada, the United Kingdom and the United States—not only by way of the constant attendance, at the many public sittings, of senior executives and technicians, including several delegations from overseas, but also by the production of hitherto unpublished data requested by the Board. Several Departments of Government have been of the greatest assistance: the Department of National Revenue, Customs and Excise (Messrs. A. W. Brown, J. J. Holland, G. E. Aust and P. P. Last); the Department of Mines and Technical Surveys (Mr. W. K. Buck); the Dominion Bureau of Statistics (Messrs. W. A. Deslauriers, J. J. Parchelo and L. A. Shackelton); the office of the Auditor-General of Canada (Mr. A. B. Stokes); and, in connection with the difficult and technical task of translation, Mr. Theo. Dumont.

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THE TARIFF BOARD

Reference No. 118

An Inquiry respecting certain basic forms of Iron or Steel

The letter from the Minister of Finance, dated May 19, 1955, directing the Tariff Board to conduct the inquiry which is the subject of this Report was as follows:

I have received representations from Canadian primary iron and steel producers to the effect that the provisions of the Customs Tariff relating to their products have become out of date. They request that these provisions be revised to take account of the expansion that has occurred in the Canadian industry, the changes that have taken place in production techniques and trade usages, and other developments.

In this connection I enclose a brief submitted to me jointly by Algoma Steel Corporation Limited, Dominion Foundries and Steel Limited, Dominion Steel and Coal Corporation Limited, and the Steel Company of Canada Limited, and also a brief from Atlas Steels Limited. You will note that these briefs relate to the definitions in section 2 of the Customs Tariff and to the following tariff items included in the classifications in Schedules "A" and "B" relating to primary iron and steel products:

374	379(d)	383(e)	386(i)	387c	442b
376	379(e)	383(f)	386(j)	388	442c
377	380(a)	383(g)	386(k)	388a	458
377a	380(b)	384	386(l)	388b	1005
377b	380(c)	384a	386(m)(i)	388c	1006
377c	380(d)	385	386(m)(ii)	388e	1007
377d	381(a)	385a	386(n)	388f	1009
377e	381(b)	385c	386(o)	388g	1015
377f	382(a)	386(a)	386(p)	392a	1023
378(a)	382(b)	386(b)	386(q)	395	1025
378(b)	382(c)	386(c)	386(r)	395a	1027
378(c)	382(d)	386(d)	386(u)	Ex.410l	1028
378(d)	383(a)	386(e)	386b	438f	1045
379(a)	383(b)	386(f)	386e	440f	1045a
379(b)	383(c)	386(g)	387	441c	1057
379(c)	383(d)	386(h)	387a	442	1058

The Government are considering the desirability of revising the tariff provisions relating to primary iron and steel products in the light of all the relevant information and it is desirable that all interested parties be given an opportunity to express their views.

I therefore direct the Tariff Board to make a study and report, under section 4(2) of the Tariff Board Act, on the items in Schedules "A" and "B" of the Customs Tariff which relate to primary iron and steel products up to and including those commonly known in the trade as rolling mill products, with particular reference to the items enumerated above, and on the definitions contained in section 2 of the Customs Tariff in so far as these relate to primary iron and steel products. In this connection, I would request the Board to prepare a revised schedule of tariff items, with recommendations as to rates of duty, covering primary iron and steel products, and to include the proposed schedule in its report.

In preparing its proposed schedule of rates of duty on primary iron and steel products, I would expect that the Board would have regard to the rates now applicable to more highly manufactured products of iron and steel.

In drawing up a revised schedule it is recognized that certain adjustments in margins of preference may be involved. In this regard, however, it is not the intention that there should be any general change in preferential margins and the Board should keep in mind the obligations of the GATT in this respect.

Yours sincerely,

W. E. HARRIS

The numerous tariff items to which the Minister refers by number alone in the above letter are set out in full in the Draft Schedule which was distributed by the Board for the convenience of all interested parties, and which is incorporated, intact, in this Report as Appendix A.

Public Sittings Held

Public sittings of the Board under this Reference were held at Ottawa as follows:

November 7, 1955
February 6, 7 and 8, 1956
February 27, 28 and 29, 1956
March 19, 20 and 21, 1956
April 11, 1956
April 23, 24, 25, 26 and 27, 1956
May 14 and 23, 1956
October 22 and 23, 1956

A nominal roll of participants in any or all of the said public sittings is incorporated herein as Appendix J.

A transcript of the proceedings at all public sittings is attached to this copy of the Report, for the Table of Parliament.

Apart from evidence or information put on record at public sittings, the Board secured for its own use considerable material of a confidential nature which, in accordance with the provisions of the Tariff Board Act, will be so treated.

Visits to Industries

During the course of the inquiry, the following plants or mills were visited by one or more members of the Board and their assistants:

Algoma Steel Corporation, Limited, Sault-Ste-Marie, Ont.
Atlas Steels Limited, Welland, Ont.
Dominion Foundries and Steel, Limited, Hamilton, Ont.
Dominion Steel and Coal Corporation, Limited
 Dominion Iron and Steel Limited, Sydney, N.S.
Steel Company of Canada, Limited, The, Hamilton, Ont.
Alberta Phoenix Tube & Pipe, Limited, Edmonton, Alta.
Anthes-Imperial Company, Limited, The, Winnipeg, Man.
Canada Iron Foundries, Limited, Three Rivers, Que.
Canadian Furnace Co. Limited, Port Colborne, Ont.
Canadian Tube & Steel Products Limited, Montreal, Que.
Canadian Western Pipe Mills Ltd., Port Moody, B.C.
Chrysler Corporation of Canada, Limited, Windsor, Ont.
Edmonton Steel Fabricators Ltd., Edmonton, Alta.
Galt Metal Industries, Ltd., Galt, Ont.
Manitoba Rolling Mill Co., Limited, Selkirk, Man.
National Auto Radiator Mfg. Co., Limited, Windsor, Ont.

Ontario Steel Products Co., Limited, Chatham, Ont.
Page-Hersey Tubes, Limited, Welland, Ont.
Premier Steel Mills Ltd., Edmonton, Alta.
Standard Tube and T.I. Limited, Woodstock, Ont.
Taylor Forge & Pipe Works of Canada Limited, Hamilton, Ont.
Western Canada Steel Ltd.
Vancouver Rolling Mills Division, Vancouver, B.C.

Bethlehem Steel Company, Lackawanna, N.Y.
Seattle, Wash.
Byers Company, A.M., Pittsburgh, Pa.
Colorado Fuel and Iron Corporation, The, Pueblo, Colo.
Great Lakes Steel Corporation, Detroit, Mich.
United States Steel Corporation
Chicago South, Chicago, Ill.
Gary Mills, Gary, Indiana
Geneva Mills, Geneva, Utah

It has been deemed inadvisable to attempt in this Introductory section of the Report on Reference No. 118 a summary of the precise proposals regarding the tariff treatment of basic Iron and Steel, as presented by the Industry to the Minister of Finance and the Tariff Board. These proposals—involving as they do literally scores of tariff items and drawback items, as well as revised Definitions—do not lend themselves to condensation in a so-called Summary. To present them in that form might well be unfair to those who made them; and almost certainly would be misleading to the reader. They are dealt with at length in the textual portion of the Report and in addition are shown in detail, item by item, in Appendix A hereto.

Interpretation of Text

Wherever in the textual portion of this Report the following terms appear, they carry the meaning hereunder shown:

Canadian Production	total Canadian production, including both that for producers' own use and for sale.
Domestic Supply	Canadian production *plus* imports.
Domestic Disappearance	Canadian production *plus* imports *minus* exports.
Available Outside Rolling Mills	either (a) Domestic disappearance *minus* tonnage used by rolling mills; or (b) Domestic supply *minus* tonnage used by rolling mills.
Used in Rolling Mills	that part of rolling mills' own production retained for their own use *plus* purchases by rolling mills for their own use.
Used in Primary Steel Furnaces	tonnages made by primary producers and retained for their own use *plus* purchases for their own use.
Available Outside Galvanizing Mills	differs from "Available Outside Rolling Mills" in that certain galvanizing mills are not classified under the primary iron and steel industry.
Total Consumption of Pig Iron	Domestic Disappearance *plus* or *minus* change in pig iron producers' inventory.
Steel	the word "steel" includes all types of iron and steel, except where the word "iron" appears (e.g., pig iron, sponge iron, wrought iron) or where the word "steel" is specifically more limited (e.g., carbon steel, alloy steel, stainless steel).

PART I

OUTLINE OF THE GENERAL POSITION TAKEN DURING THE INQUIRY BY PRODUCERS AND USERS OF BASIC STEEL

In its approach to the Minister of Finance and to the Tariff Board, the basic Iron and Steel Industry (through the five major producers who signed the original application for review) set forth at considerable length the reasons why—in its opinion—the relevant items of the Customs Tariff should be revised. For the purposes of this section of the Report, it is proposed to do no more than outline in general terms the more fundamental of these reasons, leaving for Part IV hereof the detailed information regarding revisions in wording and rates of the many tariff items that necessarily came under review. In general, the basic producers contended: (1) that, by and large, that section of Schedule A to the Customs Tariff dealing with Iron and Steel was essentially—despite the revision effected by Parliament in 1930—the tariff of fifty years ago (1907); (2) that in many instances the wording of the many classifications had not kept pace with developments in the industry and, in some instances at least, had become obsolete and, in a practical sense, meaningless; (3) that specific duties which had been imposed since 1907 had lost their significance from the standpoint of their protective aspect; (4) that many concessions in rates of duty granted by legislation, from time to time, to "end-users" of basic forms of iron and steel were no longer necessary or justifiable; (5) that not a few of the drawback provisions similarly enacted had ceased to be warranted; and (6) that concessions which had been granted by Canada to other countries as a result of numerous Trade Agreements—while no doubt quite defensible at the time of their making—were now working, or at least threatening, injury to the domestic industry.

Summary of the Industry's Proposals

In brief—and again in general terms—the basic producers requested of the Government and of Parliament: (1) a complete review of the tariff items relative to basic forms of Iron and Steel; (2) radical revisions in nomenclature and arrangement of classifications; (3) upward revisions of the rates of duty, under all tariffs, of most of the items suggested by the Industry; (4) indirect upward revisions of even more rates of duty by the device of deleting from the tariff scores of "end-use" items and drawback-items; (5) revision of the statutory Definitions of certain basic forms of iron and steel, such revised Definitions to apply to the newly-worded tariff items; (6) wider recognition of the growing importance of alloy, stainless and so-called "special steels"; and (7) a more general use in tariff items of the principle of "class or kind" (made, or not made, in Canada) differentiation in rates. (See Appendix A for complete list of *existing* tariff items that came under review, together with the proposal by the Industry as to what should be done with each such item.)

Reaction of Users to Industry's Proposals

At public sittings which began in November of 1955 and concluded in the Fall of 1956, the proposed revisions in Definitions, wording and rates of duty were the subject of representations and argument, not only by the basic producers who had suggested them but by the representatives of scores of steel-using industries. During the Hearings, there was a general consensus that there was much to be said for re-classification and re-wording of the tariff items—with far less meeting of minds as to the rates of duty that should apply. In particular, emphasis was

laid by many secondary manufacturers upon the necessity for the retention of various end-use or drawback items—not necessarily because these provided an escape from the full-duty burden, but (very often) offered alternative sources of supply when domestic mills were unable to meet the requirements of would-be customers. It is, perhaps, not less than fair to the basic Iron and Steel Industry of Canada to record that, in the presentation before the Board of hundreds of thousands of words of economic and technical argument, there was little reference to or complaint about the *prices charged* by the domestic producers of basic steels, it being repeatedly stated by user-customers that these were in most instances (where the domestic producer could compete at all) lower than the laid-down cost of imported steels; complaints registered or fears expressed were almost entirely relative to the adequacy of domestic supplies, the kinds or grades of steel that would be available even in the case of overall sufficiency of supply, and the possibility of increases in price of domestic steel as a consequence of increased duties. (See Part IV of this Report for fuller reference, item by item, to the position of secondary manufacturers under both existing and recommended tariff schedules.)

Representations by non-Steel Interests

Representations to the Board by interests *other than* producers or direct users of iron and steel products included the following:

Interprovincial Farm Union Council (of Canada): This Brief not only opposed favorable consideration of any of the increases in rates of duty requested by the basic producers but urged that the Board "seriously consider wiping out those (duties) that still exist".

British Columbia Lumber Manufacturers Association: This Brief urged the Board "to recommend against granting any tariff increases on basic iron and steel products as being detrimental to the best interests of Canadian economy and our trade relations with the United Kingdom and other countries who are parties to G.A.T.T."

Consolidated Red Cedar Shingle Association:
Northern Interior Lumbermen's Association:
Plywood Manufacturers Association of B.C.:
British Columbia Loggers' Association:
The Truck Loggers' Association: Each of these (five) Associations endorsed the representations, and agreed with the position taken, by the British Columbia Lumber Manufacturers Association.

The Canadian Federation of Agriculture: The Federation, while approving technical revision of the schedules and while not necessarily opposing such changes in duties as would, in the opinion of the Board, be in the best interest of the Steel Industry *and* the Canadian economy in general, urged that the net result of the Inquiry should not be a recommendation that would mean any upward trend in the overall incidence of the duties on Iron or Steel.

Canadian Association of Consumers: The National Executive of this Association urged the Board "to see that the interests of Canadian consumers in this regard are fully protected".

All the above representations have been embodied in full in the verbatim record of proceedings being forwarded with this Report, as have been also such views as were expressed at the final public hearing by associations or interests such as, for example:

United Steelworkers of America: This Trade Union was represented at several of the public hearings by Mr. Harry Waisglass, whose statement at the final sitting, on behalf of his organization, will be found in full in the verbatim record.

Canadian Pulp and Paper Association (Western Division)
Air Industries & Transport Association of Canada

PART II

THE BASIC IRON AND STEEL INDUSTRY IN CANADA

The basic steel industry in Canada, in making the basic forms of iron and steel, engages in the following steps in processing ores and scrap into the final product: coking of coal, blast furnace operations, open-hearth or electric-furnace operations, steel-production by the so-called oxygen vessel process, hot-rolling and cold-rolling into what are commonly described as "rolling-mill products", galvanizing sheet and strip steel and coating sheet or strip steel with tin (this particular end-product being somewhat ambiguously termed "tinplate"). Some of the basic firms engage in only one of the above-listed operations; others, in more than one but not in all; at least one engages in practically all the operations named. Several of the firms in the group participate also in secondary-steel production—but this Report is primarily concerned with the basic production of iron or steel.

There are in Canada eighteen basic producers, with firm-names and head offices as follows:

Algoma Steel Corporation, Limited, Sault-Ste-Marie, Ont.
Atlas Steels Limited, Welland, Ont.
Burlington Steel Co., Limited, Hamilton, Ont.
Canadian Drawn Steel Company, Limited, Hamilton, Ont.
Canadian Furnace Co. Limited, Port Colborne, Ont.
Canadian Tube & Steel Products Limited, Montreal, Que.
Dominion Foundries & Steel, Limited, Hamilton, Ont.
Dominion Steel and Coal Corporation, Limited, Montreal, Que.
Enamel & Heating Products Limited, Amherst, N.S.
Manitoba Rolling Mill Co., Limited, Selkirk, Man.
Premier Steel Mills, Limited, Edmonton, Alta.
Sorel Industries Limited, Sorel, Que.
Stanley Steel Co., Limited, Hamilton, Ont.
The Steel Co. of Canada, Limited, Hamilton, Ont.
Union Drawn Steel Co., Limited, Hamilton, Ont.
Vanadium-Alloys Steel Canada Limited, London, Ont.
Vancouver Rolling Mills Division,
  Western Canada Steel Limited, Vancouver, B.C.
Vancouver Steel Co. Ltd., Vancouver, B.C.

Five (5) companies alone account for by far the great bulk of production and output, namely: Algoma Steel Corporation, Limited (hereinafter designated Algoma) and its subsidiary Canadian Furnace Co. Limited; Dominion Steel and Coal Corporation, Limited (Dosco); The Steel Co. of Canada, Limited (Stelco); Dominion Foundries & Steel, Limited (Dofasco); and Atlas Steels Limited. These five producers initiated the proposals which became the basis of the Reference to the Tariff Board by the Minister of Finance and assumed entirely the burden of placing before the Board at public sittings the presentation of the application for a revision in wording and rates of duty of the tariff items relating to basic iron and steel.

Location of Basic Producers:

The operations of the five basic producers are largely concentrated at Sydney, Nova Scotia; and Hamilton, Welland and Sault-Ste-Marie in Ontario.

Employment in Basic Steel Plants, December 1, 1955

Location	Employment in Basic Steel Plants	Total Employment in firms having 15 or more employees
Sydney	4,058	15,863
Hamilton	12,715	81,172
St. Catharines area (including Welland)	2,075	31,319
Sault-Ste-Marie	6,951	10,867

Source: Dominion Bureau of Statistics

The Sydney mills of Dosco are close to that company's coal operations in Cape Breton. Iron ore and limestone from Newfoundland are transported direct to Sydney by water. Dosco therefore has ready access to its main raw materials, but its mill is remote from the chief steel-consuming centres of Canada, namely, western Quebec and southern Ontario. It is in an advantageous position to supply those steel requirements of the Maritime Provinces which are within its range of production.

The Stelco and Dofasco mills at Hamilton have important geographic advantages. First, they have ready access by water transport to sources of coal, scrap and ore. Secondly, they are located in the industrial centre of Canada—the great bulk of steel consumption takes place within a radius of 150 miles from their mills. Although the Montreal market is somewhat farther away, rail, water and truck transport are available.

The mill of Atlas Steels at Welland has access to water transport on the Welland Canal during the navigation season. Rail and truck transport are also available. This firm's chief markets are in Ontario and Quebec.

Algoma in Sault-Ste-Marie is on the Great Lakes trade route and has access to its main raw materials by water and rail. It is more distant from the markets of southern Ontario, but can, and does, ship by water during the navigation season.

Products of the Basic Industry:

In speaking of what might be termed the chief products of the basic steel industry, one must bear in mind that this industry consumes a great deal of its own production of the more primary forms. For example, the basic producers use the bulk of their pig iron output in their own open-hearth furnaces or in the oxygen steel-making process. Similarly, ingots, billets and blooms are rolled in their own mills into rails, bars, angles, plate or sheet. Some hot-rolled sheet is further processed into cold-rolled sheet, galvanized sheet or tinplate. Other products, e.g., rods, are made into wire, nails and other items of a secondary nature in plants owned by basic steel producers. The first column of the table below shows the total tonnages of the various products manufactured by the basic producers; the second column indicates the total sold for use in Canada or for export:

Production and Sales of Basic Steel in Canada

(tons of 2000 lbs.)

Product	1954		1955	
	Tonnages Made	Tonnages Sold	Tonnages Made	Tonnages Sold
Pig iron	2,211,029	455,552	3,213,764	612,747
Steel ingots	3,113,791	5,576	4,441,743	125,331
Blooms, billets, slabs and other semi-finished rolled forms	2,273,725	150,917	2,942,725	298,646
Rails	241,922	232,484	228,991	240,983
Structural shapes	180,542	180,144	227,138	235,105
Bars	528,521	445,519	708,494	587,819
Plates	201,939	201,524	253,640	251,870
Hot-rolled sheet, strip, skelp and sheet piling	990,524	352,230	1,455,689	590,394
Cold-rolled sheet and strip	533,581	227,203	535,365	321,494
Coated sheet and strip	344,608	333,877	446,983	444,378

Source: Dominion Bureau of Statistics

By companies, the main items of production are:

Algoma: Pig iron, ingots, blooms and billets, bars, rails, sheet piling, standard structural shapes, modified wide-flange or 8-inch H-beams, strip, skelp, sheet and plate in narrow widths.

Dominion Foundries & Steel: Pig iron, ingots, blooms and billets, skelp, sheet, strip, plate, tinplate, galvanized sheet and strip.

Dominion Steel and Coal: Pig iron, ingots, blooms and billets, rails, bars, and light structurals.

Steel Co. of Canada: Pig iron, ingots, blooms and billets, bars, light structurals, skelp, plate, sheet, strip, tinplate, galvanized sheet and strip.

Atlas: Tool steels, high-speed steels, mining drill steels, special purpose steels, stainless steels and branded construction steels. Output takes the following forms: billets and blooms, bars and rounds, strip and sheet.

Size of the Basic Industry:

Year	No. of Employees	Salaries and Wages	Cost of Fuel and Electricity	Cost of Materials	Value of Shipments*
		('000)	('000)	('000)	('000)
1948	22,422	$60,498	$20,092	$116,120	$231,326
1949	22,523	65,895	18,059	128,556	249,173
1950	23,337	69,752	22,644	141,748	289,306
1951	26,230	85,814	25,906	191,120	381,427
1952	27,346	97,439	24,415	204,932	410,692
1953	27,946	104,926	24,007	187,630	388,448
1954	23,592	89,257	19,587	129,658	330,936

Source: Dominion Bureau of Statistics.
*Includes all shipments from the basic steel plants to own integrated secondary operations.

Employment and Wages:

The basic steel industry is one of the larger employers of labour among the entire "Iron and Steel Products" industries. On December 1, 1955, there were

approximately 25,800 persons employed in the making of basic steel. The following tabular statement shows employment in a selected group of industries, as of December 1, 1955:

Basic iron and steel	25,800
Machine manufacturing	34,903
Sheet metal products	17,174
Agricultural implements	11,266
Fabricated and structural steel	9,079
Motor vehicles	30,427
Motor vehicle parts	16,678
Railroad and rolling stock	32,404
Shipbuilding	21,229

Basic steel producers paid out $89,257,000 in wages and salaries in 1954, wage rates being among the highest in Canada. On December 1, 1955, the average weekly wage paid by the primary iron and steel industry (basic producers plus foundries) was $80.32. This compared with the following wage levels in other industries:

Primary iron and steel	$80·32
Agricultural implements	70·75
Fabricated and structural steel	74·77
Heating and cooking appliances	64·19
Aircraft and parts	76·92
Motor vehicles	78·45
Shipbuilding	68·28
Motor vehicle parts	70·19
Smelting and refining	79·66
Aluminum products	69·09
Electrical apparatus	69·53
Textile products	53·19
Clothing	42·08
Wood products	57·11
Pulp and paper	82·97

Source: Dominion Bureau of Statistics.

Materials used in Steel Making:

The main materials charged to blast furnaces are iron ore, sintered flue dust, limestone, dolomite, and coke, the coke having been converted from coal by the steel-makers. The product from the blast furnaces is pig iron.

Materials Charged to Blast Furnaces

('000 tons of 2000 lbs.)

Year	Iron Ore	Flue Dust	Coke	Limestone	Dolomite
1953	5,236	674	2,805	1,080	296
1954	3,749	578	1,970	778	258
1955	5,073	1,022	2,813	1,066	287

The second step in steel-making is the reduction of pig iron plus scrap and other materials to steel. This is done in an open-hearth or an electric furnace, or by the oxygen vessel process of making steel.

Steel ingots are poured from the furnaces and are rolled into blooms, billets or slabs, and further rolling produces rails, bars, structural shapes, plates, sheet and strip.

Exports of Basic Steel Products:

As a general rule, the integrated steel producers do not engage in commercial export trade on an extensive basis. Algoma's shipments, mainly to the United States, have been largely connected with special arrangements. Dosco's exports, mostly rails, have fluctuated very greatly from year to year. Neither Stelco nor Dofasco is an important exporter.

Atlas is probably the most interested in export markets, which play an important role for that company in maintaining production at higher levels than would be the case if sales were limited to the relatively small domestic market for alloy and specialty steels.

In examining export statistics, it must be borne in mind that a considerable part of the shipments to the United States is for conversion and return to Canada. In some cases, this represents shipments by the basic producer to rolling mills in the United States, for conversion into rolled products and return to the Canadian mill which exported them. Atlas, in particular, has been following this practice.

Exports usually constitute less than 10 p.c. of total Canadian steel production. The greatest tonnages shipped from Canadian mills are in the most primary forms; exports of the more processed forms of steel are very small or non-existent. The statistics in Appendix B verify that in recent years considerable tonnages of pig iron and blooms and billets have been exported. To a large extent these shipments have been made by Algoma and are tied in with a $15 million loan received by that company from United States interests in 1952; repayment is being made by the shipment of basic iron and steel to the lender. In addition, Algoma is shipping steel to manufacturers in the United States for fabrication and return to Canada as parts for incorporation in Canadian production. In such instances the United States fabricator is entitled to 99 p.c. drawback of the United States duty. Apart from the loan repayments and the shipments which are subject to drawback, Algoma's shipments to the United States are small.

Dosco has shipped substantial tonnages of rails abroad from time to time. That company's mill at Sydney is able to take advantage of ocean freight to practically all export markets. As a consequence, Dosco has, on a number of occasions, obtained business abroad to fill gaps in domestic orders.

The following statistics show shipments for the more important types of iron or steel which have been exported in volume (tons of 2000 lbs.):

Pig Iron

To	1937	1948	1952	1954	1955
United Kingdom	5,070	—	88,635	—	—
U.S.A.	16,282	662	287,141	202,597	254,472
Other countries	—	—	211	6	—
Total	21,352	662	375,987	202,603	254,472

Ingots, Billets and Blooms

To	1937	1948	1952	1954	1955
United Kingdom	—	17,683	19,636	—	82,251
U.S.A.	—	15,408	36,450	2,588	148,858
Other countries	—	2,682	241	2,758	35,360
Total	—	35,773	56,327	5,346	266,469

Rails

To	1937	1948	1952	1954	1955
British S. Africa	42,186	—	—	—	—
U.S.A.	1,570	2,747	881	74	176
Union of S. Africa	—	22,418	—	—	—
Other countries	810	134,226	1,714	1,421	71,393
Total	44,566	159,391	2,595	1,495	71,569

TRENDS IN TRADE AND PRODUCTION: BASIC IRON AND STEEL

In 1900, practically no steel industry existed in Canada; production of ingots and direct steel castings in that year amounted to 26,406 tons. In the next ten years steel-making capacity increased many-fold; by 1910 annual production exceeded 800,000 tons. This was further increased by additional million tons over the next eight years, so that, by the end of World War I, production amounted to 1,873,000 tons. This level of production was not reached again until the years of World War II, when the annual output exceeded 3 million tons. In the years since World War II, production has expanded each year (with the exception of 1954) and in 1955 reached new record levels, in excess of 4,500,000 ingot-tons. The following table portrays the rapid development of Canadian production:

Production of Steel Ingots and Direct Steel Castings, Specified Years, 1900-1955

(tons of 2000 lbs.)

1900	26,406	1946	2,327,285
1910	822,284	1948	3,200,480
1918	1,873,708	1950	3,383,575
1922	537,742	1951	3,568,720
1929	1,543,386	1952	3,703,111
1932	380,067	1953	4,116,068
1937	1,571,227	1954	3,195,030
1938	1,293,812	1955	4,529,401
1942	3,109,851		

Source: Dominion Bureau of Statistics.

The earlier pattern of production, with its violent fluctuations, contrasts sharply with the almost constant expansion in recent years, attributable to Canada's rapidly increasing population, the unprecedented volume of construction, the rapid growth of Canadian industry, the development of Canada's natural resources, and a much greater production of consumer goods, many of which are composed in part or in whole of steel. Superimposed on these factors have been large expenditures for national defence.

Trends in Production, Consumption and Imports:

It is an impossible task to compare overall Canadian production of steel and imports with complete accuracy. It is possible, however, to obtain a reasonably reliable comparison. It is first necessary to place the two series of statistics on a common basis. This can be done by converting imports, mostly rolled steel, to ingot-tons. Since rolling usually results in a 25 p.c. scrap loss, it is necessary to increase tonnages of imported rolled steel to compensate for scrap loss. It is then possible to compare both domestic production of steel and imports in terms of ingot-tons. This is done in the following table:

Production, Imports and Exports of Steel

(tons of 2000 lbs.)

Year	Canadian Production of Ingots	Imports (in ingot-tons*)	Exports (in ingot-tons*)	Domestic Disappearance	Imports as p.c. of D.D.	Exports as p.c. of D.D.
1918	1,800,172	839,750	198,179	2,441,743	34·4	8·1
1922	514,574	879,871	38,222	1,356,223	64·9	2·8
1929	1,466,759	1,697,845	57,448	3,107,156	54·6	1·8
1932	367,774	357,332	7,810	717,296	49·8	1·1
1937	1,496,575	852,290	173,805	2,175,060	39·2	8·0
1942	2,958,906	1,847,967	90,331	4,716,542	39·2	1·9
1946	2,251,741	859,083	226,949	2,883,875	29·8	7·9
1948	3,087,063	1,067,826	360,135	3,794,754	28·1	9·5
1950	3,298,071	1,099,556	310,489	4,087,138	26·9	7·6
1951	3,447,132	1,816,655	114,864	5,148,923	35·3	2·2
1952	3,577,758	1,646,285	171,414	5,052,629	32·6	3·4
1953	4,009,548	1,312,043	319,150	5,002,441	26·2	6·4
1954	3,113,791	1,003,091	58,149	4,058,733	24·7	1·4
1955	4,441,743	1,218,452	487,450	5,175,745	23·5	9·4

*That is, ingots plus rolling-mill products.

It will be observed that imports have usually been several times greater than exports. This reflects Canada's dependence on external suppliers for a number of important forms of steel, which either are not produced domestically or not in sufficient tonnage to supply total requirements. There has, however, been a marked trend for Canada to become increasingly self-sufficient in meeting its steel requirements. From the table above it will be noted that imported steel amounted to 64·9 p.c. of domestic disappearance in 1922, to 54·6 p.c. in 1929, and to 39·2 p.c. in 1937. Following World War II, imports reached or exceeded 30 p.c. of domestic requirements only twice, while in the most recent years it has ranged from 23·5 to 26·2 p.c. In terms of tonnages, imports in 1953 and 1955, two prosperous years, were less than in 1929.

In contrast to imports, domestic production has increased both in absolute and relative terms during the past decade. Ingot production expanded from 2·2 million tons in 1946 to 4·4 million tons in 1955. In terms of 1929 and 1937, when output was 1·5 million tons in each year, the record is even more impressive. The greater importance of domestic production is illustrated by the fact that while imports were 479,393 ingot-tons less in 1955 than in 1929, they were competing in a market which consumed 2,068,589 ingot-tons more steel. Canadian steel producers have therefore increased their production more than threefold since 1929 in a market which uses roughly twice as much steel.

Imports have not increased as a percentage of consumption during periods of surplus steel. In 1929, imports were 54·6 p.c. of domestic supply, while in 1932, at the trough of the depression, they were 49·8 p.c. In 1954, the only post-war year when steel was in substantial surplus, imports amounted to 24·7 p.c. of total domestic supply; in 1953, a prosperous year, imports accounted for 26·2 p.c. The explanation seems to be that during times of heavy demand, Canadians have had to supplement domestic output with imports. During periods of slack demand, domestic production has been in a better position to meet requirements, even in the face of keen competition. There have, however, been few periods in recent years when steel has been in overall surplus supply. The following table shows that the Canadian market for most types of basic steel has increased very substantially during the past decade and thus has utilized the overall capacity of the industry to a high degree:

Domestic Disappearance* of Selected Steel Products, 1946 and 1955

(tons of 2000 lbs.)

Product	Domestic Disappearance 1946	Domestic Disappearance 1955	Increase 1946–55	
			Absolute	p.c.
Hot-rolled sheet and strip	535,520	1,406,441	870,921	162·6
Cold-rolled sheet and strip	276,221	577,716	301,495	109·1
Structurals	231,917	537,064	305,147	131·6
Hot-rolled bars	552,835	782,779	229,944	41·6
Plate	230,593	387,726	157,133	68·1
Wire rods	206,635	356,081	149,446	72·3
Galvanized sheet and strip	70,269	188,483	118,214	168·2
Tinplate	191,600	296,695	105,095	54·8
Rails	131,542	174,798	43,256	32·9
Cold-rolled bars	45,581	57,640	12,059	26·4

*Because it has not always been possible to segregate exports, some figures are domestic supply.

The Pattern by Products:

By far the greatest expansion in demand has occurred in hot-rolled sheet and strip, with disappearance 870,921 tons greater in 1955 than in 1946. Usage of cold-rolled sheet and strip increased by more than 100 p.c. between 1946 and 1955. Galvanized sheet and strip, structural steels, hot-rolled bars and skelp also show very substantial increases, both tonnage-wise and percentage-wise. On the other hand, tinplate, cold-rolled bars and rails have shown relatively little increase.

Domestic production has accelerated so rapidly in most forms of steel that it has been able, not only to take care of the needs of new demand but also to replace imports in a considerable portion of the market. Imports of hot-rolled sheet and strip, for example, made up 46 p.c. of domestic supply in 1946, but only 14·8 p.c. in 1955; imported cold-rolled sheet and strip accounted for 43·8 p.c. in 1946 and 7·3 p.c. in 1955; imported skelp made up 62·5 p.c. in 1946 and 27·1 p.c. in 1955; and imported tinplate fell from 24·9 p.c. to 3·5 p.c.

For at least one form of steel, structurals, the market has greatly exceeded Canadian capacity to produce the types in greatest demand. As a result, in 1955, imported structurals constituted more than 56·5 p.c. of the total supply, as compared with 43 p.c. in 1946. Imports of rails increased in 1955 but still constituted a relatively small proportion of total Canadian requirements.

Canada has become much more self-sufficient in flat-rolled steel products, including coated steels—the forms which show the greatest increase in demand and production. Structurals are the only product where, despite a very substantial increase in demand, dependence on imports has increased considerably.

The following table illustrates the above data statistically:

Imports as Percentage of Domestic Disappearance

Product	1946	1955
Structurals	43·4	56·5
Plates	26·2	34·6
Skelp	62·5	27·1
Cold-rolled bars	43·7	21·5
Hot-rolled sheet and strip	46·4	14·8
Galvanized sheet and strip	20·2	14·8
Hot-rolled bars	12·9	10·9
Rails	3·0	9·9
Cold-rolled sheet and strip	43·8	7·3
Rail fastenings	3·8	4·7
Tinplate	24·9	3·5
Wire rods	0·5	2·0

Pig Iron: As is to be expected, pig iron production has followed the same trend as steel output, with almost a threefold increase between 1918 and 1955 and a doubling of production in recent years.

Imports of pig iron have been negligible for many years; with the exception of 1950, when they amounted to 1·4 p.c. of consumption, they have not exceeded 1 p.c. of total consumption in more than twenty years. On the other hand, exports of pig iron have grown considerably since 1950, amounting to 12 p.c. of total production in 1952 and 8 p.c. in 1955. The table shows the sizable tonnages involved in the production and export of pig iron:

Total Consumption of Pig Iron

(tons of 2000 lbs.)

Year	Canadian Production	Imports	Exports	Change in Producers' Stocks	Consumption Total	Imports as p.c. of Consumption
1918	1,195,551	67,397	4,882	n.a.	1,258,066	5·4
1922	428,923	64,960	40,908	n.a.	452,975	14·3
1929	1,209,779	36,454	8,375	n.a.	1,237,858	2·9
1932	161,426	5,323	2,272	+16,221	180,698	2·9
1937	1,006,718	7,135	43,138	−39,713	931,002	0·8
1942	1,975,014	1,536	4,272	−60,906	1,911,372	0·1
1946	1,406,252	12,125	939	−26,919	1,390,519	0·9
1948	2,125,739	7,370	662	+13,585	2,146,032	0·3
1950	2,317,121	30,560	194,528	−14,141	2,139,012	1·4
1951	2,552,893	14,554	223,635	+ 4,152	2,347,964	0·6
1952	2,681,585	1,584	375,987	+22,261	2,329,443	0·1
1953	3,012,268	25,057	345,415	−76,822	2,615,088	1·0
1954	2,211,029	18,609	202,603	+ 7,887	2,034,922	0·9
1955	3,213,764	12,386	255,592	n.a.	2,970,558	0·4

Ingots: Between 1918 and 1955, Canadian production of ingots increased by 146 p.c. Much of this increase has taken place in the post-World War II period; in 1955 production was more than 1,300,000 tons greater than in 1948. Imports have never been a significant factor in relation to domestic production: even in 1951, when the largest tonnage entered Canada, imports made up only 2·5 p.c. of domestic supply. In other words, practically the entire Canadian demand for ingots is supplied by Canadian steel mills. In past years, ingots have entered Canada from the United States for rolling into flat-rolled products and return; such shipments have taken place during periods of peak utilization of rolling capacity in the United States. To some extent this practice explains the sizable fluctuations in imports in a few years. The table below shows the significant statistical material:

Domestic Disappearance of Steel Ingots

(tons of 2000 lbs.)

Year	Canadian Production	Imports	Exports	Domestic Disappearance	Imports as p.c. of D.D.
1918	1,800,172	n.a.	n.a.	—	—
1922	514,574	n.a.	n.a.	—	—
1929	1,466,759	n.a.	n.a.	—	—
1932	367,774	n.a.	n.a.	—	—
1937	1,496,575	n.a.	n.a.	—	—
1942	2,958,906	n.a.	30,745	2,928,161	—
1946	2,251,741	1,871	35,709	2,217,903	0·1
1948	3,087,063	37,700	—	3,124,763	1·2
1950	3,298,071	8,116	—	3,306,187	0·2
1951	3,447,132	89,883	—	3,537,015	2·5
1952	3,577,758	76,945	22,047	3,632,656	2·1
1953	4,009,548	1,967	28,706	3,982,809	0·04
1954	3,113,791	1,791	—	3,115,582	0·05
1955	4,441,743	2,367	n.a.	4,444,110	0·05

Blooms, Billets, Slabs and Sheet Bars: These products, the result of the primary rolling of ingots, are not generally used commercially; they represent an intermediate step, to reduce the ingot to a shape more suited for re-rolling. The following are the production and trade statistics reported to the Dominion Bureau of Statistics:

Domestic Disappearance of Semi-Finished Rolled Forms

(tons of 2000 lbs.)

Year	Canadian Production	Imports	Exports	Domestic Disappearance	Imports as p.c. of D.D.
1918	n.a.	4,062	53,256	—	—
1922	524,577	13,832	171	538,238	2·6
1929	1,298,130	37,014	520	1,334,624	2·8
1932	247,045	3,320	—	250,365	1·3
1937	1,443,979	11,707	84,806	1,370,880	0·9
1942	1,830,624	197,879	4,369	2,024,134	9·8
1946	1,634,855	2,736	36,236	1,601,355	0·2
1948	2,313,619	14,756	35,773	2,292,602	0·6
1950	2,446,884	3,257	170,460	2,279,681	0·1
1951	2,645,540	5,798	39,101	2,612,237	0·2
1952	2,729,432	12,957	34,280	2,708,109	0·5
1953	2,870,860	2,215	98,306	2,774,769	0·1
1954	2,273,725	4,193	6,127	2,271,791	0·2
1955	2,942,725	1,784	266,494	2,678,015	0·1

Rails: The production, like the use, of rails is subject to considerable fluctuation, even in periods of continuing prosperity. Production figures do, however, show a downward trend for each year after 1948, excepting 1953. Although imports increased in 1950 and subsequent years, the magnitude of the increase was usually much less than the decline in domestic output. Until 1955, imports of rails made up a small percentage of Canadian consumption: in that year they increased to nearly 10 p.c. of domestic disappearance. Concurrently, production for domestic railways fell, sharply, by 78,000 tons; the overall level of production was bolstered, however, by large export orders, amounting to 71,586 tons. For the most part imports of rails have been connected with special projects; while domestic production has largely been to supply the needs of the two major railways.

The following table gives the basic statistics of rail production, imports and exports:

Domestic Disappearance of Rails

(tons of 2000 lbs.)

Year	Canadian Production	Imports	Exports	Domestic Disappearance	Imports as p.c. of D.D.
1918	162,746	10,236	13,240	159,742	6·4
1922	140,969	31,674	16,422	156,221	20·3
1929	428,962	28,379	25,784	431,557	6·6
1932	50,500	5,672	4,896	51,276	11·1
1937	86,932	6,637	29,112	64,457	10·3
1942	183,430	2,053	25,538	159,945	1·3
1946	206,374	3,893	78,725	131,542	3·0
1948	337,244	4,962	159,391	182,815	2·7
1950	286,672	17,875	12,391	292,156	6·1
1951	257,244	11,646	—	268,890	4·3
1952	253,675	8,369	2,595	259,449	3·2
1953	303,318	8,576	3,445	308,449	2·8
1954	241,922	12,852	1,629	253,145	5·1
1955	228,991	17,393	71,586	174,798	9·9

Structurals: Prior to 1937, Canadian production of structurals amounted to only a few thousand tons annually and, in most years, some 90 p.c. of domestic requirements were imported. In 1937, production increased to 93,000 tons. This was further expanded by 100,000 tons per annum during World War II. Output again increased after 1946, reaching a peak of 283,000 tons in 1953. Since 1950 Canada's capital investment program has created an unprecedented demand for structural steel, particularly in the heavier sizes. These recent years are in sharp contrast to pre-war, when demand fluctuated greatly, e.g., from 364,913 tons in 1929 to 46,339 tons in 1932. In spite of greater domestic production in post-war years, Canadian producers have not increased their proportion of the market for structurals; in fact, with the exception of 1953 they have lost ground to imported steel, as illustrated below:

Domestic Disappearance of Structural Shapes

(tons of 2000 lbs.)

Year	Canadian Production	Imports	Exports	Domestic Disappearance	Imports as p.c. of D.D.
1918	4,226	173,332	—	177,558	97·6
1922	1,029	122,623	706	122,946	99·7
1929	35,060	330,665	812	364,913	90·6
1932	16,005	30,626	292	46,339	66·1
1937	93,279	75,773	2,828	166,224	45·6
1942	190,312	295,022	2,407	482,927	61·1
1946	139,206	100,547	7,836	231,917	43·4
1948	192,253	188,185	10,568	369,870	50·9
1950	153,144	166,802	2,277	317,669	52·5
1951	245,270	337,722	3,452	579,540	58·3
1952	231,091	282,076	6,825	506,342	55·7
1953	283,203	276,368	4,863	554,708	49·8
1954	193,673	291,563	1,457	483,779	60·3
1955	236,698	303,452	3,086	537,064	56·5

Wire Rods: Production of wire rods has expanded rapidly in recent years and in 1955 was more than 100,000 tons over the pre-war peak. There have been practically no downward fluctuations during this growth period. Imports are negligible and have not been a factor for twenty-five years:

Domestic Disappearance of Wire Rods

(tons of 2000 lbs.)

Year	Canadian Production	Imports	Exports	Domestic Disappearance	Imports as p.c. of D.D.
1918	154,789	44,550	n.a.	199,339	22·3
1922	156,816	20,286	n.a.	177,102	11·4
1929	159,700	49,678	n.a.	209,378	23·7
1932	85,780	4,895	n.a.	90,675	5·4
1937	242,092	6,275	26,908	221,459	2·8
1942	256,457	2,149	7,063	251,543	0·9
1946	210,548	1,054	4,967	206,635	0·5
1948	286,990	870	2,243	285,617	0·3
1950	293,866	3,299	320	296,845	1·1
1951	318,266	7,989	373	325,882	2·4
1952	315,789	5,555	517	320,827	1·7
1953	286,471	11,486	1,185	296,772	3·9
1954	275,121	9,877	642	284,356	3·5
1955	357,775	7,007	8,701	356,081	2·0

Hot-Rolled Bars: Production and consumption of bars have fluctuated violently, particularly in the years prior to World War II, reflecting the fact that this form of steel is largely used in capital goods. Even in 1954, output dropped by more than 200,000 tons from the previous year. In spite of these fluctuations, the level of output in recent years has been much higher than pre-war. Imports have accounted for from 10 to 17 p.c. of domestic disappearance and have decreased in relation to domestic production:

Domestic Disappearance of Hot-Rolled Bars

(tons of 2000 lbs.)

Year	Canadian Production	Imports[1]	Exports[2]	Domestic Disappearance	Imports as p.c. of D.D.
1918	420,791	58,291	95,480[3]	383,602	15·2
1922	120,330	86,854	10,743[3]	196,441	44·2
1929	454,115	112,696	15,794[3]	551,017	20·5
1932	100,662	15,875	580[3]	115,957	13·7
1937	388,662	40,610	7,484	421,788	9·6
1942	592,016	102,802	4,127	690,691	14·9
1946	492,853	71,179	11,197	552,835	12·9
1948	634,315	78,817	46,877	666,255	11·8
1950	684,934	54,760	16,465	723,229	7·6
1951	763,005	155,333	13,988	904,350	17·2
1952	786,972	153,834	30,681	910,125	16·9
1953	732,275	81,805	20,704	793,376	10·3
1954	528,521	59,742	4,898	583,365	10·2
1955	708,494	85,305	11,020	782,779	10·9

[1]In 1918 and 1922: hot- and cold-rolled bars grouped together.
[2]All bars.
[3]Bars and rods.

Cold-Rolled Bars: In comparison with hot-rolled bars, cold-rolled bars are of minor significance: in 1955 the domestic supply was only 7 p.c. of the domestic disappearance of hot-rolled bars. Apparently cold-rolled bars were first produced in Canada in about 1924. The year of peak consumption was 1952, since when the trend has been downward. Similarly, the trend in Canadian production has been downward since 1952. A declining trend in imports has been evident since the end of World War II, despite the rise in 1951 and 1952. While imports comprised 44 p.c. of domestic supply in 1946, they claimed only 21·5 p.c. of it in 1955:

Domestic Supply of Cold-Rolled Bars

(tons of 2000 lbs.)

Year	Canadian Production	Imports	Domestic Supply	Imports as p.c. of D.S.
1924	10,488	n.a.	—	—
1929	18,434	5,104	23,538	21·7
1932	5,079	1,822	6,901	26·4
1937	16,834	5,688	22,522	25·2
1942	32,153	20,027	52,180	38·4
1946	25,666	19,915	45,581	43·7
1948	34,791	13,749	48,540	28·3
1950	34,318	13,104	47,422	27·6
1951	47,359	16,830	64,189	26·2
1952	50,545	16,731	67,276	24·9
1953	45,954	13,549	59,503	22·8
1954	28,651	8,502	37,153	22·9
1955	45,262	12,378	57,640	21·5

Skelp: Production of skelp in sizeable quantities began after World War II and has increased substantially during the last few years. As a consequence, imports have been smaller and to a considerable extent consist of bessemer

quality skelp used in the production of small diameter pipe. From 1950 to the present, the demand for skelp has been very much higher than in pre-war years, a direct reflection of the higher levels of pipe production:

Domestic Supply of Skelp
(tons of 2000 lbs.)

Year	Canadian Production	Imports	Domestic Supply	Imports as p.c. of D.S.
1918	—	66,458	66,458	100·0
1922	—	92,061	92,061	100·0
1929	—	156,791	156,791	100·0
1932	—	50,729	50,729	100·0
1937	—	101,955	101,955	100·0
1942	—	158,338	158,338	100·0
1946	33,093	55,075	88,168	62·5
1948	59,045	60,392	119,437	50,6
1950	64,176	163,900	228,076	71·9
1951	55,440	141,031	196,471	71·8
1952	146,729	136,508	283,237	48·2
1953	134,751	121,498	256,249	47·4
1954	146,818	66,292	213,110	31·1
1955	247,701	91,790	339,491	27·0

Plate: Canadian production of plate was relatively small until war-time demand brought about a rapid expansion of facilities and output; production rose from 95,602 tons in 1937 to 391,887 tons in 1942. In recent years, production has been well below the wartime levels, although much greater than pre-war. The decrease in production reflects the cutback in shipbuilding and other programs largely identified with Canada's war effort. Nevertheless, peacetime uses of plate in 1955 were two and one-half times as great as in 1937; furthermore, once the new pipe mills presently under construction in Canada begin to produce wide-diameter pipe, Canadian plate consumption should be well in excess of even war-time levels.

During periods of heavy demand, imports of plate have increased substantially, e.g., 1951 and 1952. This has reflected the limitations of Canadian plate-rolling capacity: Stelco has the only wide-mill capable of rolling plate to about 100 inches; this mill serves as both a plate mill and a breakdown mill for Stelco's continuous strip mill. Dofasco's plate mill is approximately half the width of Stelco's, and Algoma's about one-quarter. Canadian ability to supply wide plates is thus considerably limited in periods of heavy demand. It must be remembered that a sizeable quantity of plate production is sold as skelp and is not included in the figures below. The following figures show that imports have been decreasing as a percentage of domestic supply since 1951:

Domestic Supply of Plates
(tons of 2000 lbs.)

Year	Canadian Production	Imports	Domestic Supply	Imports as p.c. of D.S.
1918	30,639	46,891	77,530	60·5
1922	2,779	50,087	52,866	94·7
1929	18,238	167,117	185,355	90·2
1932	25,049	22,059	47,108	46·8
1937	95,602	54,577	150,179	36·3
1942	391,887	118,688	510,575	23·2
1946	170,043	60,550	230,593	26·2
1948	228,978	67,681	296,659	22·8
1950	150,857	106,820	257,677	41·4
1951	184,707	212,966	397,673	53·6
1952	234,115	250,707	484,822	51·7
1953	221,818	155,333	377,151	41·2
1954	201,939	104,815	306,754	34·2
1955	253,640	134,086	387,726	34·6

Hot-Rolled Sheet and Strip: Production has increased greatly in the past ten years, from 286,882 tons in 1946 to 1,198,428 tons in 1955. This manyfold increase reflects the numerous new and enlarged uses of steel in both consumer and producers' goods. Imports accounted for only 14·8 p.c. of the domestic supply of sheet and strip in 1955, as against 46·4 p.c. in 1946. The table also shows a decrease in the actual tonnages of sheet imported over the years:

Domestic Supply of Hot-Rolled Sheet and Strip

(tons of 2000 lbs.)

Year	Canadian Production	Imports (Hot-Rolled and Cold-Rolled)	Domestic Supply	Imports as p.c. of D.S.
1918	n.a.	57,198	—	—
1922	6,958	88,609	95,567	92·7
1929	56,582	181,194	237,776	76·2
1932	17,646	77,517	95,163	81·4
1937	110,747	184,605	295,352	62·5
1942	329,807	402,228	732,035	54·9
1946	286,882	248,638	535,520	46·4
1948	508,450	271,685	780,135	34·8
1950	755,054	250,201	1,005,255	24·9
1951	874,044	366,469	1,240,513	29·5
1952	841,148	276,933	1,118,081	24·8
1953	1,036,789	263,946	1,300,735	20·3
1954	826,648	154,331	980,979	15·7
1955	1,198,428	208,013	1,406,441	14·8

Cold-Rolled Sheet and Strip: Small tonnages of cold-rolled flat steel were produced in Canada prior to World War II. During the war, production rose sharply but, in 1946, output was still only 155,211 tons. Following the introduction of new cold-rolling facilities, production reached 535,365 tons in 1955. This increase reflects the greater demand for thin-gauge sheet steel for a multitude of industrial purposes. Imports, which supplied 43·8 p.c. of the market in 1946, accounted for only 7·3 p.c. of domestic supply in 1955:

Domestic Supply of Cold-Rolled Sheet and Strip

(tons of 2000 lbs.)

Year	Canadian Production	Imports	Domestic Supply	Imports as p.c. of D.S.
1918	n.a.	n.a.	—	—
1922	3,964	n.a.	—	—
1929	—	n.a.	—	—
1932	4,250	18,635	22,885	81·4
1937	15,997	23,004	39,001	59·0
1942	115,238	105,204	220,442	47·7
1946	155,211	121,010	276,221	43·8
1948	223,554	133,623	357,177	37·4
1950	437,931	83,745	521,676	16·1
1951	524,866	130,634	655,500	19·9
1952	510,166	95,738	605,904	15·8
1953	566,269	72,477	638,746	11·3
1954	533,581	28,724	562,305	5·1
1955	535,365	42,351	577,716	7·3

Galvanized Sheet and Strip: This product has been produced in Canada for many years. The introduction of continuous galvanizing lines in 1955 resulted in a sharp boost in production and output in that year was 100,000 tons greater than in 1946. Imports have declined from 20·2 p.c. of domestic supply in 1946 to 14·8 p.c. in 1955:

Domestic Supply of Galvanized Sheet and Strip

(tons of 2000 lbs.)

Year	Canadian Production	Imports	Domestic Supply	Imports as p.c. of D.S.
1918	n.a.	13,904	—	—
1922	n.a.	51,591	—	—
1929	63,813	33,770	97,583	34·6
1932	27,728	13,541	41,269	32·8
1937	62,878	17,811	80,689	22·1
1942	42,090	4,561	46,651	9·8
1946	56,052	14,217	70,269	20·2
1948	99,055	15,813	114,868	13·8
1950	99,130	26,587	125,717	21·1
1951	112,587	25,960	138,547	18·7
1952	111,566	21,142	132,708	15·9
1953	108,945	25,265	134,210	18·8
1954	103,642	23,066	126,708	18·2
1955	160,559	27,924	188,483	14·8

Tinplate: Little tinplate was produced in Canada prior to World War II. In the nine years since the war, output has increased from 143,935 tons in 1946 to 286,424 tons in 1955. During this time electrolytic tinning lines have largely replaced the older hot-dip process. Imports, which once furnished 100 p.c. of requirements, made up only 3·5 p.c. of domestic supply in 1955:

Domestic Supply of Tinplate

(tons of 2000 lbs.)

Year	Canadian Production	Imports	Domestic Supply	Imports as p.c. of D.S.
1918	—	72,489	72,489	100·0
1922	—	53,417	53,417	100·0
1929	—	82,288	82,288	100·0
1932	18,330	40,319	58,649	68·7
1937	22,133	116,801	138,934	84·1
1942	101,489	49,439	150,928	32·8
1946	143,935	47,665	191,600	24·9
1948	152,145	47,756	199,901	23·9
1950	229,424	1,243	230,667	0·5
1951	269,310	1,577	270,887	0·6
1952	257,134	1,122	258,256	0·4
1953	244,742	5,325	250,067	2·1
1954	240,966	6,631	247,597	2·7
1955	286,424	10,271	296,695	3·5

DISTRIBUTION AND CONSUMPTION OF STEEL

The pattern of distribution within Canada, by provinces and products, of basic steels, domestic and imported, is difficult to set down in neat statistical tables. Nor, indeed, can it be accurately described in narrative, for the simple reason that there are involved so many imponderables that any textual treatment of the subject can be but broadly illustrative—albeit reasonably informative. So fundamental a matter as an attempt to reconcile, for example, the concepts of *total supply* and *total consumption*—and either of these with, for example, *total shipments*—would fail of its purpose, having regard to the frequent dissimilarities in official statistics relative to imports on the one hand and domestic production on the other; variations in inventories from year to year and even from month to month; the countless inter-provincial transactions (inward and

outward) for which data have never been assembled; and many other elusive factors that could be mentioned. For the purposes of this Report, therefore, it has been deemed sufficiently accurate to regard the "*supply available*" of a given province as being the sum of the shipments thereto *by the five applicant firms* and the imports arriving at the customs ports of such province.

Distribution by Provinces:

Where then, in general terms, are the basic forms of steel sold or used in Canada; and from where do they come? A fairly comprehensive picture of what we may call "supply available" in Canada is afforded by the following (tons of 2000 lbs.):

Year	(1) Total Canadian Shipments	(2) Total Imports	(3) Supply Available	(4) Col. (2) as p.c. of Col. (3)
1951	2,609,141	1,477,250	4,086,391	36·1
1952	2,546,138	1,338,097	3,884,235	34·4
1953	2,690,015	1,071,453	3,761,468	28·5
1954	2,229,784	820,495	3,050,279	26·9
1955	2,736,032	987,715	3,723,747	26·5

One broad generalization regarding the figures may be made: between 1951 and 1955, Canadian "supply available" remained fairly constant, except in 1954, when it declined by 25 p.c. below 1951. In each year, imports made up a progressively smaller percentage of the total. The extent to which each of the five Canadian producers shared in the total Canadian shipments is shown below, (tons of 2000 lbs.):

	1951	1952	1953	1954	1955
Algoma	726,376	729,817	654,550	476,624	719,251
p.c. of Total	27·8	28·7	24·3	21·4	24·5
Dosco	460,160	363,662	336,513	250,613	236,434
p.c. of Total	17·6	14·3	12·5	11·2	8·1
Stelco	1,134,654	1,137,620	1,347,649	1,192,690	1,535,940
p.c. of Total	43·5	44·7	50·1	53·5	52·4
Dofasco	247,480	281,575	328,485	292,375	411,400
p.c. of Total	9·5	11·0	12·2	13·1	14·0
Atlas	40,471	33,464	22,818	17,482	28,419
p.c. of Total	1·6	1·3	0·8	0·8	1·0
Total	2,609,141 100·0 p.c.	2,546,138 100·0 p.c.	2,690,015 100·0 p.c.	2,229,784 100·0 p.c.	2,931,444 100·0 p.c.

A feature of the above table is its reflection of the steady growth of Dofasco's share of total domestic shipments over the five-year period. Stelco's shipments and share of the market have also increased over the period. The sharp dip in Algoma's shipments in 1954 reflects that company's vulnerability in times of lessened demand for steel. Dosco's share has declined.

How do the provinces share in the breakdown of total Canadian supply? A glance at the table below reveals that, throughout the five-year period, the two central provinces of Ontario and Quebec have been absorbing more than 85 p.c. of total supply; and that, during the period, the "centre of gravity" of steel consumption appears to have shifted very slightly westward:

Provincial Supply Available as Per Cent of Canadian Supply Available[1]

Province	1951	1952	1953	1954	1955
Newfoundland	0·3	0·2	0·2	0·3	0·2
Prince Edward Island	·05	0·1	0·01	0·01	—
Nova Scotia	1·9	1·9	2·2	2·1	1·1
New Brunswick	1·2	1·1	1·1	1·0	1·0
Quebec	23·7	21·7	23·8	22·4	21·7
Ontario	60·0	60·7	62·6	60·8	62·9
Manitoba	4·7	4·8	4·5	5·2	4·8
Saskatchewan	0·2	0·2	0·3	0·3	0·3
Alberta	0·6	0·7	1·0	1·6	1·6
British Columbia	4·1	5·2	4·3	6·3	6·4
Canada	96·7	96·6	100·0	100·0	100·0

[1]1951 and 1952 do not add up to 100 p.c. because the Canada totals include certain forms of steel not included in the provincial breakdown.

It is of interest to note the *kinds* of basic steels that comprise the total supply of each province. It is emphasized in connection with this aspect of the distribution pattern that a considerable degree of duplication or over-lapping—and, hence, of confusion—is inherent in the statistics, due in no small part to the fact that in many instances a single tariff item (or a single statistical import-classification) may relate to such various forms as plates, sheets, strips and bars, with no breakdown available or ascertainable as to the proportion of each of these in the total. On the basis, therefore, of certain arbitrary assumptions that have to be made in analyzing such statistical data as are available, the following highlights emerge:

It has been stated above that, year in and year out, Ontario and Quebec together absorb (and no doubt largely use) approximately 85 p.c. of total supply available, domestic and imported. Of this quantum, *Ontario* in 1955 received: of bars and rods, 57 p.c. of the total for all Canada; of structural steel, 42 p.c.; of sheet, strip and plate, 69 p.c. The corresponding figures for *Quebec*, for the same year, were 26, 32·6 and 19 p.c., respectively. Similarly, these two provinces appear to have absorbed in 1955 by far the greater part of the Canadian supply available of tinplate (almost all of which, incidentally, was of domestic production), and 76·4 p.c. of the total of galvanized sheet and strip. The facts set down in this paragraph alone illustrate graphically the great and concentrated consuming area for basic iron and steel represented by the two central provinces.

Information supplied in detail by domestic producers has enabled the Board to produce the detailed tabular statements regarding Distribution which comprise Appendix C hereto, and upon which the above general comments have been based.

Not less interesting than the information as to the destination of imported and domestic steel is information as to the purpose to which such steel is put upon its arrival: that is, distribution *by use.* The former answers, in one sense, the question: Where?; the latter, the question: Why? Here, again, such statistical data as are available must be used with caution and a degree of reservation—but the general picture that is presented by such a study is informative, particularly as regards trends or changes in trends in consumption. The Board has attempted to collate the facts and to analyze them in such overall manner as to permit a summary as to distribution on the basis of use; this is intended to be complementary to that regarding distribution by areas recorded in the immediately preceding paragraphs:

Distribution by Uses:

The tables in this Section and in Appendix D set forth a breakdown of steel consumption by industrial groups in Canada as of 1954, data re *distribution* for 1955 not being available. This Section and the tables in Appendix D should

be read only with careful reference to the notes preceding the said Appendix. This material, which shows the tonnages and forms of steel used by each major steel-using industry, accounts for the major portion of total Canadian disappearance of each type of steel shown in the table. No attempt has been made in the tables in Appendix D to indicate the types or tonnages of primary steel used by primary steel producers in their own processing operations; in other words, the tables in the Appendix deal only with the steel used by secondary industries, whether it is of domestic origin or imported. (Steel consumed by the primary steel producers in their own operations is dealt with in the immediately following section.)

The following brief tabulation lists the more important groupings of users of steel in Canada and shows the tonnages apparently consumed by each in 1953 and 1954 (tons of 2000 lbs.):

Industrial Grouping	Tons Consumed	
	1953	1954
Foundries	501,498	419,435
Sheet metal products	487,563	493,910
Bridges and structural steel	433,310	453,641
Railways	282,717	291,304
Wire and wire products	283,884	300,948
Boilers and plate work	152,715	137,628
Agricultural implements	159,490	125,628
Railway rolling stock	162,513	136,375
Motor vehicle parts	179,947	116,821
Motor vehicles	95,960	43,010
Heating and cooking apparatus	67,762	64,927
Shipbuilding	91,419	72,131
Hardware and tools	73,041	55,213
Machinery	111,894	64,927

Three general comments should be made regarding the above figures: First, the foundries group includes not only cast-iron pipe producers but also steel-pipe and tube manufacturers; of the steel used by this entire group, more than half consists of steel for the manufacture of steel pipe and tubing. Second, the figure shown for steel consumption by the motor vehicle industry is greatly understated, in that the industry imports very large tonnages of steel components for incorporation into its production; these are not included in either the above tabulation or Appendix D. Third, the figures shown above do not necessarily include all the steel used by each of the industries included in the table; for example, in a number of cases the consuming industry reported its uses of certain types of steel in dollars only.

The following material is an examination of the consumption of steel in Canada on a product by product basis:

Pig Iron: In 1953 and 1954, consumption of pig iron by secondary industries amounted to approximately 360,156 tons and 267,278 tons, respectively. The larger part of this was used by commercial foundries, although substantial quantities were used by manufacturers of motor vehicle parts, machinery, boilers, heating and cooking apparatus, and agricultural implements. Pig iron makes up the great bulk of the combined iron and steel requirements of foundries. For most other users, however, pig iron consumption is usually well under 20 p.c. of their total steel needs. Most of the above-mentioned users of pig iron are concentrated in Ontario and Quebec, where 332,946 tons of pig iron were used in 1953, and 252,624 tons in 1954. A few thousand tons of pig iron are used in the Maritime Provinces, largely for the manufacture of parts of railway rolling stock. Several thousand tons are also used in Manitoba by foundries supplying local markets. The other western provinces used negligible quantities of pig iron.

Structural Shapes: In 1953 and 1954, approximately 447,210 tons and 446,132 tons, respectively, of structural steel were used in Canada. The largest users are firms engaged in the erection of bridges and other construction; consumption for these purposes amounted to 292,797 tons in 1954, approximately 65 p.c. of total Canadian consumption. Other users in 1954 were producers of machinery, 27,988 tons; railway rolling stock, 36,072 tons; shipbuilding, 20,058 tons; boilers, 9,309 tons; and motor vehicle parts, 4,507 tons. Although the greatest use of structurals is in Ontario and Quebec, where 369,000 tons were utilized in 1953 and 358,801 tons in 1954, substantial tonnages are used from coast to coast. In the Maritime Provinces, appreciable tonnages enter into shipbuilding, as well as into the construction of railway rolling stock and various types of structures. The bridge and structural steel industry in Manitoba and Alberta utilized a large proportion of the 44,158 tons of structural steel consumed in those two provinces in 1954. The spread of industrialization in these provinces and the oil developments in Alberta no doubt account for a large part of this demand. British Columbia used in 1954, 26,948 tons, mostly for bridges, structures and the manufacture of machinery.

Bars and Rods: The tonnages of bars and rods used in Canada greatly exceed the use of steel in any other form, e.g. in 1953, more than 764,000 tons of bars and rods were used by secondary industries, the corresponding figure for 1954 being 692,717 tons. More than 284,000 tons of rods were converted into wire in 1954, a substantial part of such wire being produced in plants owned by the basic steel producers. Among the other large users of bars and rods are the following industries, with tonnages used in 1954: agricultural implements, 65,044 tons; hardware, 30,302 tons; construction steel, 62,629 tons; machinery, 28,533 tons; motor vehicle parts, 39,012 tons; and railway rolling stock, 28,231 tons. Approximately 579,000 tons of bars and rods were used in Central Canada, in the plants of producers of agricultural implements, motor vehicle parts, hardware, and wire and wire products. Substantial tonnages were used in Nova Scotia, 84,296 tons in 1953 and 60,958 tons in 1954, where manufacturers of wire and railway rolling stock are the chief users. Manitoba, Alberta and British Columbia used lesser quantities, mostly in the erection of bridges or other structures.

Sheets, Uncoated: Consumption of uncoated sheet is second only to that of bars and rods. In 1953 and 1954, 499,286 tons and 424,453 tons, respectively, were used in Canada. Because of the many uses for sheet, numerous industries consume sizeable quantities of this form of steel. Two industries, however, use considerably greater than average quantities; these are the sheet metal products industry, which used 125,698 tons in 1954, and the electrical apparatus and supplies industry, which used 89,395 tons in the same year. Other large-scale users are manufacturers of agricultural implements, heating and cooking apparatus, motor vehicle parts and boilers. Consumption of sheet is heavily concentrated in Central Canada, where most of the metal working and durable consumer goods industries are centred, although small quantities are used in New Brunswick and the western provinces by local sheet metal working industries.

Tinplate: Tinplate is used in large tonnages in Canada, with consumption amounting to 224,628 tons in 1953 and 255,208 tons in 1954. Most of the tinplate is used in the manufacture of tin cans by two companies which concentrate their operations in Ontario and Quebec. Smaller can-making operations take place in British Columbia and New Brunswick, largely in connection with fish processing and fruit packing.

Galvanized Sheet and Strip: Users of galvanized steel consumed 98,500 tons in 1953 and 92,986 tons in 1954. The greater part of galvanized steel is used by the sheet-metal products group for the manufacture of roofing, storage bins, sidings, piping and numerous other products. Smaller quantities are used by producers of agricultural implements, railway rolling stock and machinery. Most galvanized steel users have their plants in Central Canada, although considerable tonnages are used in the wheat-growing areas of Western Canada, presumably for conversion into storage bins, roofing and culverts. In recent years there has been a growing trend toward a greater industrial use of the lighter gauges of galvanized sheet and strip.

Strip: The uses of strip correspond closely to those for sheet. The motor vehicle parts producers use about one-third of total consumption, with the electrical apparatus producers, sheet metal products and hardware manufacturers also consuming substantial tonnages. Nearly all strip is used in Ontario and Quebec.

Plate: Canadian industry uses large tonnages of plate: 333,891 tons in 1953 and 300,745 tons in 1954. Manufacturers of boilers and structural steel fabricators are the largest users, closely followed by the railway rolling stock producers and shipbuilders. The largest consumption of plate is in Ontario and Quebec, where most of these industries are located. At the same time, substantial tonnages of plate are used in the manufacture of railway rolling stock in Nova Scotia and in the construction of bridges and other structures in Western Canada.

Other Products: The forms of steel not mentioned in the preceding paragraphs have special uses; as a result, their utilization is usually directly related to the specific requirements of a particular secondary industry. Blooms and billets, for example, are used largely for forgings or for seamless pipe. Rails and rail fastenings are produced almost solely for the railways and tramways and to a very small extent for mines and some forest operations. Skelp enters entirely into the manufacture of pipes and tubes, mostly in Ontario with smaller operations in Quebec and British Columbia.

Many of the industrial groups which use steel in their production use a variety of forms. In a few instances, industries are highly dependent on one or two forms of steel. The most notable example is the foundry group within the *iron-casting industry.* This group uses large tonnages of pig iron with negligible amounts of blooms, billets, bars and other forms of steel. Heating and cooking apparatus manufacturers use pig iron and uncoated sheet almost exclusively. Wire producers use little else than rods. The problems created by a multitude of tariff rates, which vary from product to product and even differ for various sub-divisions of any one product, are often perplexing, particularly to the industries using steel in many forms. A reduction in the number of tariff items and a more closely-related rate structure would without doubt greatly reduce the tariff complexities faced by such industries. The problems for users of few forms are probably less, although often still of a complex nature because of numerous "end-use" or drawback items.

Consumption by Steel Producers:

The immediately preceding Section has dealt with the consumption of primary iron and steel products by secondary industries. The basic producers use a large proportion of their own production of steels for processing in their own plants. Pig iron, for example, is used in open-hearth furnaces to make steel ingots; the ingots are rolled into blooms, billets and slabs; these in turn are hot-rolled into bars, rails, structural shapes, plate, sheet or strip; hot-rolled strip is often cold-rolled; and finally cold-rolled steel may be coated with zinc, tin

or other metal. All of these operations are carried out by the basic steel industry, which is therefore the major consumer of many of its own products. *The following material shows that great quantities of the more primary forms of iron and steel are retained for further processing in the steel mills where they were produced.* As the degree of processing advances, larger proportions of production are sold to secondary industry, and after the final processes, such as coating, total production is offered for sale outside the basic steel industry.

Pig Iron: The trend in recent years is for steel furnaces in the plants where the pig iron was produced to absorb an increasingly large percentage of their production. This overall trend is reflected in the fact that the percentage of pig iron retained by the entire primary iron and steel industry rose from 77·4 p.c. in 1950 to 87·4 p.c. in 1955.

Consumption of Pig Iron

(tons of 2000 lbs.)

Year	Total Consumption	Used in Primary Steel Furnaces[a]	Used Elsewhere in Canada
1950	2,139,012	1,677,504	461,508
1951	2,347,964	1,837,731	510,233
1952	2,329,443	1,958,258	371,185
1953	2,615,088	2,311,378	303,710
1954	2,034,922	1,767,307	267,615
1955	2,970,558	2,596,394	374,164

[a] Includes minor tonnages used by other than the four integrated producers.

Ingots: Practically the entire domestic consumption of ingots occurs in the rolling mills of the primary steel industry; the exception is the small tonnage used in the manufacture of very heavy forgings.

Semi-Finished Rolled Forms: Blooms, billets, slabs, and sheet bars are largely used by the primary steel industry for rolling into structurals, rails, bars, rods, and flat-rolled products. Some billets, however, are used for forging and for the manufacture of seamless pipes and tubes. The following table shows that in recent years consumption of semi-finished rolled forms outside the rolling mills has not exceeded 5 p.c. of domestic disappearance:

Consumption of Semi-Finished Rolled Forms

(tons of 2000 lbs.)

Year	(1) Domestic Disappearance	(2) Used by Rolling Mills	(3) Used Outside Rolling Mills (Col. 1 minus Col. 2)	(4) Used Outside Rolling Mills as p.c. of D.D.
1950	2,279,681	2,210,197	69,484	3·0
1951	2,612,237	2,487,051	125,186	4·8
1952	2,708,109	2,586,459	121,650	4·5
1953	2,774,769	2,710,114	64,655	2·3
1954	2,271,791	2,195,600	76,191	3·4

Rails: All rails are sold as produced:

Availability of Rails

(tons of 2000 lbs.)

Year	Canadian Production	Sales by Canadian Mills	Imports	Exports	Available Outside Rolling Mills
1950	286,672	286,753	17,875	12,391	292,237
1951	257,244	254,911	11,646	—	266,557
1952	253,675	251,894	8,369	2,595	257,668
1953	303,318	299,808	8,576	3,445	304,939
1954	241,922	232,484	12,852	1,629	243,707
1955	229,231	215,279	17,393	71,586	161,086

Structural Shapes: Structural shapes are a finished product; thus practically the entire domestic disappearance occurs outside primary steel mills. The table below shows production and sales, imports and exports:

Availability of Structurals

(tons of 2000 lbs.)

Year	Canadian Production	Sales by Canadian Mills	Imports	Exports	Available Outside Rolling Mills
1950	153,144[1]	151,710[1]	166,802	2,277	316,235
1951	245,270	239,669	337,722	3,452	573,939
1952	231,091	223,071	282,076	6,823	498,322
1953	283,203	273,591	276,368	4,863	545,096
1954	193,673	190,521	291,563	1,457	480,627

[1] Light structurals not included in this year.

Hot-Rolled Bars: Considerable tonnages of hot-rolled bars are used in primary mills to make a number of further processed products. For example, long angle splice bars, tie-plate bars, and other long rail joint bars are not sold as such; they are produced for use in the manufacture of rail fastenings in the primary mills. Other hot-rolled bars are sold by the hot-rolling mills to the two Canadian producers of cold-rolled and cold-drawn bars. In 1954, about 18 p.c. of domestic disappearance was accounted for by the rolling mills, and 82 p.c. by other industries. By comparison with the years 1950 to 1953, inclusive, the figures for 1954 show a larger percentage used outside the rolling mills. The decline in total absorption by rolling mills after 1952 is due partially to lower production of rail fastenings and partially to reduced production of cold-rolled bars.

Consumption of Hot-Rolled Bars

(tons of 2000 lbs.)

Year	(1) Domestic Disappearance	(2) Used by Rolling and Drawing Mills	(3) Used Elsewhere	(4) Col (2) as p.c. of Col. (1)
1950	723,229	164,041	559,188	22·7
1951	904,350	215,094	689,256	23·8
1952	910,125	227,368	682,757	25·0
1953	793,376	178,913	614,463	22·6
1954	583,365	106,064	477,301	18·2

Cold-Rolled Bars: As cold-rolled bars are not further processed in the basic steel mills, domestic supply is practically the same as availability outside the rolling-mill sector:

73371—3½

Cold-Rolled Bars

(tons of 2000 lbs.)

Year	Canadian Production	Sales by Canadian Mills	Imports	Available Outside Rolling and Drawing Mills[1]
1950	34,318	34,883	13,104	47,987
1951	47,359	47,578	16,830	64,408
1952	50,545	50,652	16,731	67,383
1953	45,954	46,094	13,549	59,643
1954	28,651	28,829	8,502	37,331

[1] This column includes such quantities as were exported.

Wire Rods: The following table shows the total supply of wire rods and the amounts made available to wire manufacturers who are not connected with steel producers:

Wire Rods

(tons of 2000 lbs.)

Year	Shipments by Canadian Mills	Imports	Exports	Available Outside Basic Steel Mills	Shipments to Independent Wire Producers
1950	289,871	3,299	320	292,850	120,429
1951	318,797	7,989	373	326,413	122,514
1952	317,589	5,555	517	322,627	128,900
1953	286,463	11,486	1,185	296,764	113,095
1954	274,264	9,877	642	283,499	105,555
1955	358,665	7,007	8,701	356,971	—

Rail Fastenings: Finished rail fastenings require no further processing in rolling mills; hence there is little difference between domestic supply and amounts available outside the primary mills:

Finished Rail Fastenings

(tons of 2000 lbs.)

Year	Canadian Production	Sales by Canadian Mills	Imports	Available Outside Rolling Mills
1950	67,958	67,422	3,696	71,118
1951	86,243	85,360	3,726	89,086
1952	90,863	89,408	4,028	93,436
1953	65,120	64,361	8,199	72,560
1954	52,561	50,813	3,810	54,623
1955	82,439	80,100	4,047	84,147

Plates: Practically the entire production of plate is sold by the basic mills.

Plate

(tons of 2000 lbs.)

Year	Canadian Production	Sales by Canadian Mills	Imports	Available Outside Rolling Mills[1]
1950	150,857	146,559	106,820	253,379
1951	184,707	183,994	212,966	396,960
1952	234,115	234,799	250,707	485,506
1953	221,818	220,539	155,333	375,872
1954	201,939	201,524	104,815	306,339
1955	288,407	284,966	134,086	419,052

[1] Includes exports, which are not available separately.

Hot-Rolled Sheet and Strip: The figures for sheets available outside the basic steel mills include imports of hot- and cold-rolled sheet and strip. As a consequence, hot-rolled sheet available outside the basic mills is over-stated, while cold-rolled sheet is under-stated, since it includes only part of the cold-rolled imports. Large quantities of hot-rolled sheet and strip are used within the rolling mills for conversion into cold-rolled sheet and strip. By additional steps, cold-rolled steel is converted into coated steel. The figures of consumption of hot-rolled sheet by the basic steel mills and by other industries is shown in the table below. The sharp drop in sheet available outside the basic mills in 1954 reflects the contraction in orders placed with the steel mills in that year, perhaps resulting from inventory liquidations by secondary steel users:

Hot-Rolled Sheet and Strip

(tons of 2000 lbs.)

Year	Consumption by Rolling Mills	Available Outside Rolling Mills
1950	510,057	495,198
1951	647,344	593,169
1952	675,353	442,728
1953	691,211	609,524
1954	637,729	343,250

Cold-Rolled Sheet and Strip: This form of steel is used by the basic steel mills for a number of additional processes, coating being the more common. There is also a very substantial demand from secondary industries for cold-rolled flat steel. The table shows the allocation between primary and secondary uses:

Cold-Rolled Sheet and Strip

(tons of 2000 lbs.)

Year	Consumption by Rolling Mills	Available Outside Rolling Mills
1950	254,993	266,683
1951	332,806	322,699
1952	308,041	297,863
1953	318,560	320,186
1954	306,378	255,927

Galvanized Sheet and Strip: Galvanized steel is a finished mill product; therefore virtually the entire production is sold and becomes available to other industries:

Galvanized Sheet and Strip

(tons of 2000 lbs.)

Year	Sales by Canadian Mills	Imports	Available Outside Galvanizing Mills[1]
1950	98,872	26,587	125,459
1951	113,393	25,960	139,353
1952	111,901	21,142	133,043
1953	106,363	25,265	131,628
1954	105,575	23,066	128,641
1955	159,386	27,924	187,310

[1] Includes exports.

The preceding material shows that nearly 90 p.c. of pig iron production, practically 100 p.c. of ingot production, and the greater part of billet, bloom and slab output, are utilized by the basic steel producers for their own uses. However, other forms of steel, e.g. sheet, are utilized to some extent in the basic steel mills with the remainder being sold. The industry's entire production of rails, structurals, coated sheet, and plate is marketed commercially.

Trends in Steel Distribution:

By Provinces: Figures for the provincial supply of steel for 1950-55 show only very small variations in the pattern of distribution across Canada. In 1954 and 1955, a slightly higher proportion of supply was available in the western provinces. The increased use of steel in Alberta and in particular in British Columbia is worthy of note, as illustrated by the following figures:

Supplies of Steel Available

(tons of 2000 lbs.)

Year	Alberta	British Columbia
1951	23,846	144,294
1952	29,142	175,869
1953	39,481	143,493
1954	50,896	175,259
1955	62,365	242,728

In British Columbia, this shows an increased use of steel in all but the most primary forms. In Alberta, the increased tonnage results from the greater use of structural shapes in construction and of rails and other track materials for railway transport. In spite of this increased use of steel in these provinces, their total consumption is still a relatively small fraction of that in Central Canada, being 8·2 p.c. in 1955.

Both percentagewise and in terms of tons, steel supplies in the Maritime Provinces remained fairly constant from 1951 to 1954, with a drop in 1955.

While the overall relationship of total steel supply available in Ontario and in Quebec shows narrow fluctuations during the period 1950-55, the relationship among individual products changed considerably. The consumption of rails and track material increased to a much greater extent in Quebec than in Ontario. This resulted from the extensive construction of rail lines to various new developments in the former province, the most notable being the line from Seven Islands to the iron ore deposits on the Quebec-Labrador border. The proportion of structural steels used in Ontario has shown a slight relative increase, reflecting greater capital investment. The statistics in Appendix C indicate a shift towards a slightly greater relative supply of flat-steel products in Ontario with a decrease in Quebec. However, the shortness of the period, and the fact that it includes an unusual year (1954), plus the limitations of the statistics, make it difficult to bring to light with any degree of assurance trends in steel consumption in these two important steel-consuming provinces.

By Consuming Industries: This Section should be read in the light of the notes preceding Appendix D. The period 1951-54 is perhaps too short to be a reliable indicator of even medium-term trends, especially for those industries

which are characterized by sharp short-term fluctuations in volume of activity. For example, the motor vehicle parts industry increased its consumption of steel by 28·6 p.c. between 1950 and 1953; in 1954, however, that industry's usage fell by 35 p.c. Much the same is true of steel usage by producers of electrical supplies, ships and hardware. Perhaps the best illustration is afforded by the railway rolling-stock industry, which is almost entirely dependent on the railways for orders; since the railways tend to concentrate their replacements during periods of higher revenue, the flow of orders to the rolling-stock producers is very uneven.

The demand for many important producers' goods is highly dependent on a relatively few buyers, whose needs are often subject to extreme fluctuation. A new major power development, for example, may greatly increase the demand for heavy electrical equipment and boilers. That filled, however, the demand for such equipment may decline until another major development is undertaken.

External factors also are often of paramount importance. The number of foreign orders placed with Canadian shipyards is largely determined by whether or not lower-cost foreign yards are in a position to accept additional business for delivery within a reasonable period of time. Imports of foreign-made capital equipment also may have a considerable influence on the levels of domestic production in that the entire demand for a particular type of product may be represented by a relatively few orders, the loss of any one of which would considerably reduce the output of domestic producers.

For a number of industries it is possible, however, to discern what appear to be trends in steel consumption. The Canadian sheet-metal industry, for instance, has steadily increased its consumption of steel, from 443,000 tons in 1950 to 494,000 tons in 1954, much of the increase being in tinplate and galvanized sheet. The greater use of galvanized sheet is no doubt directly related to the high level of construction in recent years and the greater demand for tinplate reflects the trend to more extensive use of prepared foodstuffs. The overall increase in the use of sheet steel underlines the steady trend to increased production and uses of light-gauge flat-rolled steels.

The most spectacular increase in steel usage is in the construction industry (including steel fabricators). Steel consumption by this industry rose from 312,000 tons in 1950 to 454,000 tons in 1954. The increase was, of course, in bars and structural shapes, and reflects the expanding expenditure in Canada on plant and other structural developments.

Steel consumption by manufacturers of boilers and other plate work increased steadily during the years 1950-54, from 109,000 tons to 138,000 tons. This expansion of output reflects the oil developments in Western Canada, the increase in oil-refining capacity, and urban and industrial expansion, in all of which boilers and tank-storage play an important role.

One of the largest iron and steel users, the so-called iron castings industry, increased its consumption of iron and steel very considerably in 1951 and 1952. In both 1953 and 1954, however, the tonnages of steel used by the industry decreased sharply. These decreases simply reflect the reduced level of production of steel pipe, castings and machinery by the pipe manufacturers and foundries in 1953 and 1954. (In 1955, this trend was again reversed.) To some extent, the reduced level of pig iron consumption by foundries may be indicative of a permanent trend to the substitution of steel stampings for many items which were previously cast. The reduced usage of skelp in 1954 does not indicate a

long-term downward trend in the use of the product; rather, the opposite is true. Several new pipe mills are being established in Canada; this will result in a much larger use of this form of steel in the future.

The use of steel in the agricultural implement industry fell drastically, from 231,000 tons in 1952 to 126,000 tons in 1954. The level of activity in this industry is related to the level of farm incomes.

As might be expected, those industries which have been closely connected with the rapid development of Canadian oil production, with the increased rate of industrial and urban construction, with resources-development projects, or with the increased demand for consumers' durable goods, have increased their intake of steel.

INFLUENCE OF FREIGHT CHARGES ON TRADE IN CANADA IN BASIC STEEL PRODUCTS

Freight charges play a very important role in the distribution of and trade in basic steel products in Canada. With the exception of tool and specialty steels, basic steel products have relatively low value. Freight charges therefore are a major consideration in determining the laid-down cost of steel at users' plants. As a consequence, the two steel mills in Hamilton, which sell over 90 p.c. of their joint output in southern Ontario and Quebec, have a considerable advantage freightwise over the products of United States or overseas mills, the only sizable exception being in the Windsor area, which is adjacent to steel suppliers in neighbouring Detroit.

Atlas at Welland is in much the same favourable position in relation to its markets in Central Canada. But, since alloy or specialty steels are relatively expensive, the impact of freight charges is less substantial though still important.

The mills at Hamilton have a geographic advantage in Ontario and Quebec over the other two Canadian integrated steel mills, located at Sydney, Nova Scotia and Sault Ste. Marie, Ontario. Although the latter mills also find their chief markets in Quebec and southern Ontario, they are, because of the relatively greater cost of transporting their products to these markets, at a considerable freight disadvantage. While it is true that in its sales to the Maritime Provinces, Dosco has a freight advantage, that market for steel is an exceedingly limited one. Similarly, Algoma has a slight freight advantage in shipping to some parts of Western Canada; however, there also the market is much smaller than in Central Canada. Moreover, certain steel mills in the western United States have freight advantages, in shipping to certain western Canadian markets, over Algoma and other Canadian mills. In British Columbia, all Canadian mills necessarily face heavy competition from both overseas suppliers and United States mills.

A number of steps have been taken to overcome the freight disadvantages faced in shipping to Western Canada and these have tended to place Canadian steel mills in a somewhat better position to compete for business. In the east, the Maritime Provinces have been substantially assisted by reductions in freight charges to Central Canada; these have helped Dosco to sell in the markets of Quebec and eastern Ontario. Further details are given in subsequent sections of this Report.

The following sections attempt to show the incidental protection offered by freight rates in certain regions, as well as to explain the obstacles these raise in others; and an effort is made to evaluate the relative importance of advantages versus disadvantages. This has been done in relation to each of the three steel-producing centres in Canada—Sydney, Hamilton and Sault Ste. Marie. There are no other integrated steel mills in Canada. Although there are rolling mills in both Quebec and the west, their output is relatively small and their products very limited in types and sizes. Furthermore, as such mills often sell on a restricted local basis, freight is not of the same importance for them as it is for the integrated mills; in view of this, no attempt has been made to discuss freight in relation to such small local mills.

In preparing this Chapter it has been necessary to make certain assumptions, some of which will not always hold true. For example, domestic freight charges are always compared with the *lowest* freight charge from a non-Canadian source. At the public hearings it was brought out, however, that consumers often could not obtain their requirements from the nearest foreign mill: Instead, in periods of tight supply, they purchased wherever steel was available. Although it is often the case that a vendor will equalize freight on a United States mill nearer to the Canadian purchaser, this is not always the case. When no freight allowance is made, the freight advantage to Canadian mills obviously is understated. A further assumption inherent in the numerous calculations is that the prices regularly published in "Iron Age" are those at which steel is normally sold in the United States. The prices shown in "Iron Age" are, however, sometimes reduced by freight allowances; although this would not be the case for the prices used in this Chapter, since they are based on the nearest United States mill. It has also been assumed that where more than one means of transport is available, shipment will be made by that offering *the lowest rate.* Furthermore, it has been assumed that the freight charges for water, rail and truck cover roughly the same services for the shipper.

In the tables, the symbol "−" (minus) before either a freight differential, or a differential expressed as a p.c. of the price, means that such differential is an adverse one for the Canadian mill or mills. Absence of a symbol indicates a differential favourable to the Canadian mills.

Impact of Freight Charges in Central Canada:

In an earlier section of this Report, it has been shown that more than 60 p.c. of the steel consumed in Canada is used in Ontario; also, that a further 23 to 25 p.c. of total Canadian steel consumption takes place in Quebec. Thus the steel used in these two provinces has in recent years accounted for more than 85 p.c. of total Canadian steel consumption.

In the steel-consuming areas of Ontario and Quebec, the mills at Hamilton and Welland enjoy considerable freight advantage for the greater proportion of their products. With few exceptions, freight charges from Hamilton to all of southern Ontario and to Montreal (which is by far the chief steel-consuming centre in Quebec) are appreciably lower than freight charges from competing United States or overseas points. Hamilton is but a few miles from Toronto, Oshawa, Welland, London, Oakville and other steel-consuming centres which together use more than half of the total steel consumed in Canada. While it is somewhat farther removed from Montreal, competing United States mills lie at an even greater distance.

Stelco and Dofasco at Hamilton have the choice of rail, truck or water transportation (the latter during the navigation season from April until December). Competition between the various forms of transportation has resulted in very favourable rates to practically every important steel-consuming centre in the two provinces. The tables in Appendix E hereto indicate in detail the freight advantages enjoyed by the Hamilton mills over non-Canadian mills, in Ontario and Quebec; the following brief table illustrates the situation, as regards three chief basic forms of steel, *on the basis of freight rates in force on March 1, 1956:*

Freight Charges to Key Steel Markets in Ontario and Quebec

(cents per 100 lbs.)

TO	EX—Hamilton	EX—Buffalo	EX—Fairless, Pa.	EX—U.K.
Montreal:				
Bars, plate and sheet...........	37[1] 45[2]	76[1] 83[2]	90	69[1]
Toronto:				
Bars, plate and sheet...........	13	43	—	122[1]
St. Catharines:				
Bars, plate and sheet...........	15	34	—	—
Welland:				
Bars, plate and sheet...........	17	36	—	116[1]

[1] Summer rate, applies during navigation season.
[2] Winter rate.
Rates not specially marked apply during the entire year.

From the above table it will be seen that Hamilton has a freight advantage of 39 cents per 100 lbs. to Montreal; 30 cents per 100 lbs. to Toronto; 19 cents per 100 lbs. to St. Catharines and 19 cents per 100 lbs. to Welland. This advantage is calculated on the basis of freight from the nearest foreign competing point, as compared with the freight from Hamilton. The advantage increases when compared with more distant foreign competing points: for example, Hamilton has an advantage of 53 cents per 100 lbs. into Montreal over Fairless, Pa.

In 1954, Dosco marketed 75 p.c. of its Canadian sales of basic steel in Ontario and Quebec. This company operates basic steel plants at Sydney and Montreal. At the Sydney mill, pig iron, ingots, blooms, billets, slabs, bars and small shapes and rails are produced. In Montreal, bars and small shapes only are rolled. Dosco's bar-mill in Montreal is in an advantageous position to sell locally and to market bars and small shapes, from Montreal, for some considerable distance into eastern Ontario. At Oshawa, however, Dosco begins to be at a freight disadvantage in relation to the Hamilton mills. During the navigation season, Dosco has a freight advantage in the Toronto market over the United States' steel mills located at Buffalo. In the winter, however, the rail rate between Buffalo and Toronto is considerably below the rate from Montreal, and west of Toronto the freight differential against Dosco rises sharply.

The Algoma Steel Corporation operates its mills at Sault-Ste.-Marie. It also owns the Canadian Furnace Company at Port Colborne; this subsidiary firm supplies pig iron to Quebec and Ontario. All types of steel marketed by Algoma are produced in and shipped from Sault-Ste.-Marie. Algoma faces high freight charges to its main markets in southern Ontario and Quebec—where it sells over 80 p.c. of its production—since its mill is at a relatively great distance from these markets. Truck transport is not as readily available as in southern Ontario; moreover, the highway from the Sault will not permit the same loading of trucks as will those in the southern part of the province.

Algoma has been making serious and commendable efforts to reduce its undoubted freight handicap in Central Canada. For several seasons this producer has shipped substantial quantities of steel to southern Ontario on specially-chartered lake vessels. These ply between Sault-Ste.-Marie and ports on Lake Erie, where they transfer their cargoes to truck transports, which deliver them to their ultimate destination. By this means, undetermined savings in freight have been realized. The problem of transport is nevertheless a very real one for Algoma since a large part of its output still must move by rail over relatively long hauls.

In the markets it serves in Ontario and Quebec, Algoma is at a considerable disadvantage freightwise with respect to both Canadian steel mills at Hamilton and United States mills at Buffalo and Detroit. At Montreal, Algoma's freight charges are roughly equal to those borne by overseas producers, but are considerably higher than those of Stelco and Dofasco. It can be said therefore that Algoma faces a freight disadvantage, in most of its major markets, from either domestic or foreign competition or both. The one notable exception to this rule is the Montreal market for the heavier types of structurals, in which instance Algoma enjoys a slight freight advantage over British and European shippers and a more considerable advantage over United States suppliers. Other Canadian steel mills do not make the heavier sizes of structurals and are therefore not a competing factor.

The following data show, for the more important forms of basic steel, the advantages or disadvantages in Central Canada, from freight charges, which accrue to Canadian mills in relation to imported steel and in relation to one another:

Bars: In 1954, more than 92 p.c. of Canadian shipments of bars and rods were to the provinces of Ontario and Quebec. In this market, Stelco, with bar-mills at Montreal and Hamilton, has a very considerable freight advantage over foreign and other domestic producers. At Montreal, the apparent advantage to Stelco over Buffalo is 76 cents per 100 lbs.; this is 14 p.c. of the price of bars at Buffalo. In all of Ontario except the Windsor area, Stelco's Hamilton mill enjoys a considerable freight advantage over Buffalo: At Oshawa, Toronto and London this is in excess of 5 p.c. of the price of bars at Buffalo. Only in the Windsor area does freight create a disadvantage, amounting to something under 3 p.c. of the price at Detroit. The story is much the same in relation to imports from the United Kingdom; the advantage to Stelco is a considerable one at Montreal and increases in Ontario.

Dosco's bar-mill at Montreal enjoys the same freight advantage locally on its output as Stelco's Montreal mill. This advantage is offset to some extent, however, by the long freight haul involved in moving basic steel from Dosco's Sydney mill to Montreal for rolling into bars. In Ontario, Dosco's Montreal mill is at a freight disadvantage vis-a-vis Buffalo everywhere, except at Toronto during the navigation season. Algoma is in much the same position in relation to Buffalo as is Dosco. Only in Montreal does freight give an advantage; in all of southern Ontario, freight creates a disadvantage for Algoma. The real competition for Dosco's and Algoma's bar-mills is not from imports but from Stelco. The freight advantage enjoyed by Stelco to all points in Central Canada is very substantial, greatly exceeding the differentials enjoyed by Buffalo over Dosco and Algoma.

The following tables illustrate statistically the advantages or disadvantages to Canadian mills which result in Central Canada from *differentials* in freight charges, ("extras" where referred to in certain tables are necessarily hypothetical):

Differentials in Freight Rates Between Buffalo and Canadian Mills, in Markets in Central Canada

BARS

TO	EX—Sydney, N.S.		EX—Montreal		EX—Hamilton		EX—Sault-Ste.-Marie	
	Differential cents/cwt.	Differential as p.c. of Buffalo price[1]	Differential cents/cwt.	Differential as p.c. of Buffalo price[1]	Differential cents/cwt.	Differential as p.c. of Buffalo price[1]	Differential cents/cwt.	Differential as p.c. of Buffalo price[1]
Montreal................	17	3·1	76[2]	14·1	39	7·2	15	2·8
Oshawa.................	—	—	−9	−1·7	30	5·5	−4	−0·7
Toronto.................	—	—	8	1·5	30	5·5	−7	−1·3
London..................	—	—	−28	−5·2	29	5·4	−14	−2·6
St. Catharines...........	—	—	−40	−7·4	19	3·5	−23	−4·2

[1] Base price of $4.65 per 100 lbs. at Buffalo, as reported in "Iron Age", May 3, 1956, plus 75 cents for extras, making a total of $5.40.

[2] Dosco and Stelco have bar-mills at Montreal.

Differentials Between Detroit and Canadian Mills, in the Windsor Area

BARS

TO	EX—Hamilton		EX—Sault-Ste-Marie	
	Differential cents/cwt.	Differential as p.c. of Detroit price[1]	Differential cents/cwt.	Differential as p.c. of Detroit price[1]
Windsor Area..............	−15	−2·7	−36	−6·5

[1] Base price of \$4.75 per 100 lbs. at Detroit, as reported in "Iron Age", May 3, 1956, plus 75 cents for extras, making a total of \$5.50.

Differentials Between United Kingdom[1] and Canadian Mills, in Central Canada

BARS

TO	EX—Montreal	EX—Hamilton	EX—Sault-Ste-Marie
	Differential cents/cwt.	Differential cents/cwt.	Differential cents/cwt.
Montreal..	69[2]	34	8
Toronto..	87	109	72

[1] Summer rate for U.K.

[2] Dosco and Stelco have bar-mills at Montreal.

Differentials Favouring Stelco's Bar-Mills over Dosco's Bar-Mill in Central Canada

BARS

(cents per 100 lbs.)

Montreal	Oshawa[2]	Toronto[2]	London[2]
nil[1]	39	22	57

[1] Both firms transport steel to Montreal for rolling into bars: The freight haul to Montreal from Hamilton is much shorter, however, than that from Sydney.

[2] Differentials in favour of Stelco over Dosco.

Differentials Favouring Stelco over Algoma, in Central Canada

BARS

(cents per 100 lbs.)

Montreal	Oshawa	Toronto	London
61	34	37	43

Structurals: While Dosco, Stelco and Algoma produce light shapes on bar-mills, only Algoma rolls heavy structurals. The following deals with heavy structurals only, since light shapes are considered to be bars for pricing or for freight rate purposes.

At Montreal, Algoma has a very slight freight advantage over imported structurals. In Ontario—the largest market for structural steel—Algoma is at a freight disadvantage in practically every region. Some saving in freight cost is made by the use of charter-vessels during the navigation season; this reduces, or may on occasion even eliminate, the disadvantages, which are shown in the table:

Differentials Between Buffalo and Sault-Ste.-Marie, in Central Canada

STRUCTURALS

	Quebec	Montreal	Toronto	Hamilton	St. Catharines	Windsor[4]
Differentials cents/cwt.........	8·5[2]	22[2]	− 7[2]	− 5[2]	−23	14[2]
	3·5[3]	17[3]	−12[3]	−17[3]		− 6[3]
Differentials as p.c. of price[1]....	1·6	4·3	− 1·3	− 1·0	− 4·5	2·7
	0·7	3·3	− 2·3	− 3·3		− 1·2

[1] Average price of $5.15 per 100 lbs. for imported heavy beams, 1955.
[2] Based on boat rate from Sault-Ste-Marie.
[3] Based on rail rate from Sault-Ste-Marie.
[4] Structurals not rolled in Detroit.

Differentials Between United Kingdom and Sault-Ste.-Marie, in Central Canada

STRUCTURALS

	Quebec	Montreal	Toronto
Differentials cents/cwt.............................	−9·5	18	72

Plate: Stelco produces plate to a maximum of 100 inches in width; Dofasco, to approximately 50 inches, and Algoma to about 26 inches. It is therefore only in the narrower widths that the Canadian mills compete with one another; in the wider sizes, Stelco competes only with imports.

The Hamilton mills derive a considerable advantage, from freight, in Central Canada, in relation to imports from Buffalo and the United Kingdom. For example, in Toronto the favourable differential is 6 p.c. of the price at Buffalo. The one region in Central Canada where these mills have no freight advantage is Windsor.

Algoma has a slight freight advantage at Montreal, but over imports only; it is at a very great disadvantage vis-a-vis the Hamilton producers. In Ontario, Algoma faces freight handicaps of some size in relation to Buffalo and Detroit suppliers, and of very substantial magnitude in relation to its two Canadian competitors in this market. The tables below show advantages to Stelco and Dofasco and disadvantages to Algoma:

Differentials Between Buffalo and Canadian Mills, in Central Canada

PLATE

	EX—Hamilton		EX—Sault-Ste-Marie	
TO	Differential cents/cwt.	Differential as p.c. of Buffalo price[1]	Differential cents/cwt.	Differential as p.c. of Buffalo price[1]
Montreal..................	39	7·8	15	3·0
Toronto..................	30	6·0	− 7	−1·4
Welland..................	19	3·8	−24	−4·8

[1] Base price of $4.50 per 100 lbs. at Buffalo as reported in "Iron Age", May 3, 1956, plus 50 cents for extras, making a total of $5.00.

Differentials Between United Kingdom[1] and Canadian Mills, in Central Canada

TO	EX—Hamilton		EX—Sault-Ste-Marie	
	Differential cents/cwt.	Differential as p.c. of U.K. price[2]	Differential cents/cwt.	Differential as p.c. of U.K. price[2]
Quebec City	4	0·9	−20	−4·4
Montreal	34	7·6	8	1·8
Toronto	109	24·2	72	16·0

[1] Summer rates from United Kingdom.
[2] Based on average price of $4.50 per cwt. for plate, over 66 inches but under 78 inches wide, imported from the U.K. in 1955.

Differentials Between Detroit and Canadian Mills, in the Windsor Area

PLATE

TO	EX—Hamilton		EX—Sault-Ste-Marie	
	Differential cents/cwt.	Differential as p.c. of Detroit price[1]	Differential cents/cwt.	Differential as p.c. of Detroit price[1]
Windsor Area	−15[2]	−2·9	−56[2]	−11·0
	−13[3]	−2·5	−36[3]	− 7·0

[1] Base price of $4.60 per 100 lbs. at Detroit, as reported in "Iron Age", May 3, 1956, plus 50 cents for extras, making a total of $5.10.
[2] On basis of rail rates from Canadian mills.
[3] On basis of boat rates from Canadian mills.

Differentials Favouring Hamilton Mills over Algoma, in Central Canada

PLATE

(cents per 100 lbs.)

Quebec City	Montreal	Toronto	Welland
24	26	37	43

Sheet and Strip: At Montreal, Toronto and the other sheet metal-using centres of Central Canada, Stelco and Dofasco benefit from favourable freight differentials in comparison with suppliers in Buffalo and the United Kingdom. The only exception is Windsor, where the Detroit mills have a margin of advantage.

Algoma is at a disadvantage in all markets in relation to either Buffalo or the United Kingdom and at a still greater disadvantage versus Stelco and Dofasco, in amounts of 26 cents per 100 lbs. at Montreal and 37 cents at Toronto. The tables show this picture as follows:

Differentials Between Buffalo and Canadian Mills, in Central Canada

SHEET AND STRIP

TO	EX—Hamilton		EX—Sault-Ste-Marie	
	Differential cents/cwt.	Differential as p.c. of Buffalo price[1]	Differential cents/cwt.	Differential as p.c. of Buffalo price[1]
Montreal	41	8·1	15	2·9
Toronto	30	5·9	− 7	−1·4
St. Catharines	19	3·7	−23	−4·5

[1] Base price of $4.32 per 100 lbs. for hot-rolled 18 gauge or heavier at Buffalo, as reported in "Iron Age", May 3, 1956, plus 75 cents for extras, making a total of $5.07.

Differentials Between United Kingdom[1] and Canadian Mills, in Central Canada

SHEET AND STRIP

TO	EX—Hamilton		EX—Sault-Ste-Marie	
	Differential cents/cwt.	Differential as p.c. of U.K. price[2]	Differential cents/cwt.	Differential as p.c. of U.K. price[2]
Quebec	−9·5	−1·3	—	—
Montreal	20	2·7	−6	−0·8
Toronto	109	14·7	72	9·7

[1] Summer rates from U.K.

[2] Based on average price of $7.42 per 100 lbs. for sheet 0·080 inch or less in thickness, imported from the U.K. in 1955.

Differentials Between Detroit and Canadian Mills, in the Windsor Area

SHEET AND STRIP

TO	EX—Hamilton		EX—Sault-Ste-Marie	
	Differential cents/cwt.	Differential as p.c. of Detroit price[1]	Differential cents/cwt.	Differential as p.c. of Detroit price[1]
Windsor Area	−15[2]	−2·9	−56[2]	−10·8
	−13[3]	−2·5	−36[3]	− 6·9

[1] Base price of $4.425 per 100 lbs. at Detroit, as reported in "Iron Age", May 3, 1956, plus 75 cents for extras, making a total of $5.175.

[2] On basis of rail rates from Canadian mills.

[3] On basis of boat rates from Canadian mills.

Differentials Favouring Stelco and Dofasco over Algoma, in Central Canada

SHEET AND STRIP

(cents per 100 lbs.)

Montreal	Oshawa	Toronto	St. Catharines
26	34	37	42

Skelp: Welland is by far the largest skelp-using centre in Canada, although smaller quantities are used in Brisish Columbia and Montreal. The two pipe mills at Montreal are owned by Dosco and Stelco.

At Welland, the two Hamilton mills have a slight freight advantage over Buffalo. Both Hamilton and Buffalo have a very substantial advantage over Sault-Ste.-Marie, i.e., 16·4 cents and 12 cents, respectively. Neither Hamilton nor Buffalo produces the narrower widths; the nearest competing source being Youngstown which is at approximately a 6 cent adverse differential at Welland in relation to Sault-Ste.-Marie. The charges on which the following calculations are based are rail or truck rates:

Differentials Between Buffalo and Canadian Mills, in Central Canada

SKELP

TO	EX—Hamilton		EX—Sault-Ste-Marie	
	Differential cents/cwt.	Differential as p.c. of price[1]	Differential cents/cwt.	Differential as p.c. of price[1]
Montreal	46	10·2	32	7·1
Welland	4	0·9	−12·4	−2·8

[1] Average price of $4.50 per 100 lbs. for skelp imported into Canada.

Tinplate: This product is produced in Hamilton by Stelco and Dofasco. At Montreal, Toronto and Chatham, the largest can-producing centres in Central Canada, these Hamilton producers have large freight differentials in their favour:

Differentials in Favour of Hamilton over Warren, Ohio

TINPLATE

	Montreal	Toronto	Chatham
Cents/cwt	60	59	45
As p.c. of price[1]	7·1	7·0	5·3

[1] Base price of $8.40 per 100 lbs. for electrolytic tinplate, 0·25 lb. base box as reported in "Iron Age", May 3, 1956.

Impact of Freight Charges in Western Canada:

The long freight haul between the Ontario-Quebec area and Western Canada has always been a major economic problem. It has greatly increased the landed cost in the west of Canadian goods, thus multiplying the difficulties of eastern manufacturers in meeting competition from the western United States, or from overseas shippers taking advantage of ocean shipping into British Columbia ports. In order to place eastern Canadian suppliers on a more equitable footing, a number of measures have been introduced. Among these is the so-called "bridge subsidy" whereby the Federal Government subsidizes those shipments across northern Ontario which are subject to class or commodity rates. The maximum amount of such subsidy is set at $7 million annually. This payment permits the railways to set rates at lower levels than would otherwise prevail.

Moreover, "agreed charges" have been arranged between shippers and the railways: These result in substantially reduced rates to Vancouver, in return for which the shippers must forward a given proportion of their business to that city by rail. The "agreed charges" have been one of the most important factors tending to place Canadian steel producers in a more competitive position on the west coast. Without these reduced rates the freight charges to Vancouver would almost certainly be prohibitively high. In a number of instances, also, rates have been established which are reasonably closely related to freight charges from foreign competing points. Since the first of the "agreed charges" was not established until October 1954, and not extended to cover structurals until early in 1955, they had no impact on the figures shown for the provincial distribution of steel. Even in 1955, shortages of steel prevented the producers from taking extensive advantage of them.

The western market for steel is not large. In 1954, the provinces of Manitoba, Saskatchewan, Alberta and British Columbia used 11·5 p.c. of the total steel consumed in Canada. The most important items used were structurals, plate, galvanized sheet and tinplate. The proportion of consumption of these products supplied by the five Canadian mills decreases progressively, westward, vis.:

(tons of 2000 lbs.)

	(1) Canadian	(2) Imported	(3) (2) as p.c. of (1)+(2)
Manitoba	80,936	33,703	29·4
Saskatchewan	5,538	4,819	46·5
Alberta	20,027	30,869	60·6
British Columbia	49,577	125,682	71·7

As far west as Winnipeg, Canadian steel producers neither gain nor lose by way of freight charges, which are about the same from competing Canadian and United States points into Manitoba. This is reflected in the relatively small

proportion of the Manitoba steel market which is supplied by imports. At Calgary and Edmonton, Canadian producers are at a considerable freight disadvantage in relation to competitors in the United States. Because of the "agreed charges" which apply to shipments to Vancouver but not to inland points, the adverse differentials are normally considerably smaller at Vancouver than at Edmonton or Calgary. For example, the adverse differential on structurals at Calgary and Edmonton is 32 cents per 100 lbs., while at Vancouver it is 16 cents; expressed as percentages of the price of structurals at Geneva, Utah, the differentials are −6·2 p.c. in Alberta and −3·1 p.c. in British Columbia. Much the same situation exists for plate and sheet: at Winnipeg there is no differential; at Calgary, it is 53·5 cents, at Edmonton 28·5 cents, and at Vancouver 16 cents, in favour of United States mills. In terms of the Geneva price, the differentials range from −10·7 p.c. at Calgary to −3·2 p.c. at Vancouver.

Impact of Freight Charges in the Maritimes:

The four Maritime Provinces of Canada use relatively little steel: in 1954, their consumption was only 3·7 p.c. of the Canadian total. Rails and track material for railway maintenance form a substantial portion of the steel used in the region. Small quantities of structurals and plate—largely for railway car construction and ship-building—and bars, are used locally.

Dosco's mill at Sydney has a considerable freight advantage in most of the maritime region for the types of steel which it produces. For the Hamilton mills and Algoma, the freight haul to the Maritimes is relatively costly. However, in times when steel is in short supply overseas, maritime purchasers must obtain their requirements either in Canada or from the United States. In such circumstances, the adverse affect of the differentials facing Hamilton and Algoma are overstated and the advantages to Dosco are understated.

A few thousand tons of tinplate are used in New Brunswick each year in fish-preserving operations. Although the market is a small one, the Hamilton mills have considerable freight advantages in New Brunswick, as follows:

TINPLATE

	Port Elgin	Black's Harbour
Differential—cents/cwt.[1]	43	35
Differential—p.c. of price[2]	5·2	4·2

[1] Based on Hamilton and Sparrows Point, Md.

[2] Base price of $8.40 per 100 lbs. for electrolytic tinplate, 0·25 lb. base box, as reported in "Iron Age", May 3, 1956.

Summary regarding Impact of Freight Charges:

In the chief steel-consuming markets of Canada, i.e., Ontario and Quebec, favourable freight differentials provide incidental protection to the products of Stelco and Dofasco, except in the Windsor area. The degree to which favourable freight differentials assist these producers varies by areas and by products.

Dosco's bar-mill at Montreal also derives assistance from the relatively high cost of freight from competing foreign points. Dosco's Sydney mill faces a considerable freight handicap in moving any of its products to Central Canada. Likewise, for Algoma, freight differentials more often prove a handicap than a help.

In the case of both Dosco and Algoma, it is obvious that their chief competition in Central Canada is from Stelco and Dofasco. The only exceptions are rails and heavy structurals, which are not made in Hamilton.

This advantage in favour of Stelco and Dofasco is reflected in the fact that, between 1951 and 1954, their sales in Central Canada increased by over 200,000 tons, while sales by Dosco and Algoma decreased by an even greater tonnage. In the same period, imports into Ontario dropped from 873,416 tons to 370,999 tons while imports into Quebec fell from 426,209 tons to 227,069 tons.

In Western Canada, freight differentials west of Winnipeg are in favour of non-Canadian producers and vary from area to area.

In the Maritime Provinces, Dosco has a substantial freight advantage over its competitors in the forms of steel it produces. The Ontario mills are at a freight disadvantage in Nova Scotia but are in a favourable freight position in shipping tinplate to New Brunswick, since tinplate from alternative sources bears even higher rates.

THE PRICING OF STEEL PRODUCTS

Earlier in this Part, it was shown—in connection with an analysis of transportation costs—that freight charges are a varying but a major consideration in the laid-down costs of either domestic or imported steel to the user thereof. There are, of course, many other cost-factors, chief among which are the prime factor of all (base or mill price) and certain important variables, such as the scale of "extras" and the incidence of customs duties. In any attempt to weigh and compare final laid-down prices, at various points in Canada, of domestic vs. imported steels, it would be desirable to deal only with utterly identical transactions—which rarely occur. Base prices are, in most instances, published or readily ascertainable; freight charges (with their characteristic variations) can be arrived at; customs duties—by reason of the complexity of the existing tariff structure, the existence of made- or not-made- in Canada differentiations in rating, and the multiplicity in the tariff of end-use items—are anything but a constant for price-comparisons purposes; and, worst of all, "extras" over and above the mill or plant price are of such infinite variety and of such ever-changing pattern that they alone serve to make unreal, if not indeed imprecise, any effort at comparisons on a like-with-like basis. For these reasons, it has been deemed practicable to delete from the study, *for the purposes of this section*, every factor but two: base prices and freight charges. One or two uses of the phrase "net price"—a quaint one, as used in the steel industry—are purely incidental and need not confuse the reader; a duty-paid comparison in a single instance has been included solely because data regarding the trade were procurable only on that basis. The phrase used in the text to describe prices which take cognizance solely of the two factors cited above—base price and freight charges—is "delivered base price".

For consideration in connection with this section of the Report, information on prices, from 1937 to August 15, 1956, has been obtained from Canadian basic steel producers, from leading United States producers selling in Canada, from the British Iron and Steel Federation and from Canadian users and import houses. Use has also been made of the prices listed weekly in recognized trade publications. While prices have been obtained for a wide variety of steel forms, only the more important are dealt with in this section (see Appendix F for detailed price information). Prices for stainless and specialty steels are examined entirely separately, since such steels and the method of their pricing—ex warehouse—differ considerably from those of carbon steels (Appendix F).

Base-price vs. Net Price:

The base price is that price at which a steel product can be purchased in a specified basic thickness, width, chemistry, length, etc. Each base price applies to a broad category of steel; for example, one base price applies to all carbon

steel plates, another to all carbon steel sheet, and a third to all structurals. This system of base prices is almost universally followed and since the categories covered by the base prices are usually of uniform coverage it is possible to compare base prices at various mills, both in Canada and abroad, on a reasonably-comparable basis. In actual practice, as suggested above, steel is seldom sold at the base price, since most purchasers wish some variation from the basic specifications. Each such variation from the basic size, shape, width, chemistry, etc. may involve an "extra"; that is, an additional charge. The "extras" are added to the base price and the combined charges become what is known in the steel trade as the "net" price. It is difficult, and even dangerous, to attempt to compare net prices, since detailed information is usually not available respecting actual shipments to enable one to ascertain whether the specifications, and hence the "extras", are exactly comparable. There are literally hundreds of different combinations of extras for most types of steel, thus making attempts at precise comparison most hazardous. Furthermore, in earlier years the scale of extras in Canada and in the United States differed considerably, with the Canadian "extra" charges usually being noticeably above those in the United States; however, "extras" in Canada and the United States have been fairly comparable since 1952. The base price is by far the major component of net prices; "extras", while numerous and confusing to the layman, seldom account for more than 10 p.c. of the so-called "net" price of carbon steels.

Most Canadian f.o.b. mill prices have historically been higher than corresponding prices in the United States. The two exceptions concern foundry pig iron and rails, the f.o.b. mill prices for both of which have been comparable in Canada and the United States for many years. Although the differentials in prices of other steel products have sometimes been substantial, in recent years these differentials on most products have progressively been reduced, notably at mid-1955. Most of the differentials that remained were again reduced following the price increases of August, 1956, in both Canada and the United States since, in practically all instances, the Canadian increases were smaller than those for similar products in the United States. The following figures show differentials by which Canadian mill prices have exceeded United States mill prices, *expressed as percentages of United States prices:*

Product	1937	1947	1955 (July 1)	1956 (Jan. 1)	1956 (Aug. 15)
Hot-Rolled Bars	8·16	5·0	7·0	3·2	nil to 1·4
Structurals	n.a.	18·0	6·9	3·2	nil
Hot-Rolled Plate	20·7	—	11·3	7·7	6·2
Hot-Rolled Sheet	20·8	18·0	3·7 to 9·8	4·1	2·7
Cold-Rolled Sheet	—	—	5·0	2·4	5·2[1]
Tinplate	—	—	10·2	3·8	3·6

[1] A price increase which had occurred in Canada in April, 1956, explains this increase in differential.

It is important to note, in connection with structurals in the above table, that the calculation of differentials is based upon an f.o.b. mill price at Sault-Ste-Marie. In fact, however, this price is purely a nominal one, since Algoma (*a*) does not in reality sell structurals to any extent in the Sault-Ste-Marie area; (*b*) does not in fact sell on an f.o.b. mill basis at all, but rather on a delivered basis to Canadian points, such delivered prices being less than the f.o.b. mill price plus freight by the amount of freight charges absorbed by the Company (on a formula based upon weighted freight allowances to Canadian points). In other words, *net realization* to Algoma at the mill is probably a fairer basis of comparison with mill prices of United States mills making no freight allowance to Canadian customers. So calculated, the line in the table re Structurals would appear as follows:

Product	1937	1947	1955 (July 1)	1956 (Jan. 1)	1956 (Aug. 15)
Structurals	nil to 4·2	12·4	−1·9	−0·9	−1·8*

* (−) means lower than United States price.

In comparing Canadian and United States prices in this section no adjustments have been made for exchange differentials. Although the Canadian dollar sold at a 10 p.c. discount during a period from 1947 to 1950, it has been found that the differential was relatively small in most of the years in which prices are examined. As a consequence, if the Canadian and United States prices were placed on a common currency basis, they would not be greatly different from the unadjusted figures for the selected years:

U.S. Dollars in terms of Canadian Dollars

July 2, 1937	$1·00156
" 2, 1947	1·0000
" 3, 1950	1·1000
" 3, 1953	·994375
" 2, 1954	·9790625
" 4, 1955	·985625
Dec. 30, 1955	·9990625
May 1, 1956	·994375
Aug. 9, 1956	·9825

Narrowing of the Gap:

A number of reasons no doubt account for the rapid and progressive narrowing of these differentials since 1947. First of all, the tariff protection afforded by those items bearing specific rates of duty was much greater in 1937 and in 1947, because of the lower prices in those years. Secondly, the Canadian dollar sold at a discount in many years until 1950, whereas it has been at a premium in recent years. Thirdly, Canadian mills have installed new equipment and have greatly increased output, which has almost certainly increased unit-productivity. Possessed of this new and more modern equipment, it has apparently been the policy of Canadian mills generally to favour moderate prices in the interests of market development; such a pricing policy has also placed the Canadian industry in a much better position to increase its share of the Canadian market for a number of important steel products, as proven by the diminished proportion of imports of many flat-rolled steels. In pursuance of this policy, Canadian prices for a number of steel products have been at levels which were determined less by the tariff than by favourable freight differentials, particularly in Central Canada, where the chief steel markets are located. The substantial and favourable freight differentials enjoyed by the mills at Montreal and Hamilton are such that they usually completely outweigh the unfavourable differential in mill prices and even give these mills a slight advantage in delivered base prices. In Western Canada, most Canadian producers have to make "freight allowances" from their f.o.b. mill base prices—apart from such portion of the tariff protection as they may require—to compete with the products of United States mills located close to the Western Canadian market.

As regards delivered prices, Algoma and Dosco are in a less favourable position than the Hamilton mills. On products which are made in Hamilton they must meet the Hamilton price plus freight from that city to the destination. Thus, for example, if Algoma wishes to sell sheet in Toronto its price cannot

exceed the Hamilton price plus freight from Hamilton to Toronto. Since the freight charge from Sault Ste. Marie to Toronto is much greater than from Hamilton, Algoma must absorb the difference as a "freight allowance" from its base prices. For products not made in Hamilton—e.g. medium and heavy structurals—it is usually necessary for Algoma and Dosco to make some "freight allowance" because of competition from overseas and from United States mills at Buffalo and in the Western United States. Algoma's prices on bars and flat-sheets are therefore often determined by those of the Hamilton mills, regardless of the tariff; and on structurals, by the freight advantages enjoyed by overseas and United States mills in many Canadian markets.

It has not been the policy of Canadian mills to vary their prices extensively in response to changing levels of demand for steel. Instead, they have attempted to promote price stability in their sales. To a large extent, this reflects the fact that prices in the United States remained steady (or even increased following annual wage increases) in 1954 and, since imports from the United States constitute the bulk of the competition for Canadian mills, pricing policies of the latter are largely influenced by United States prices. Nevertheless, the threat of overseas competition and a contracting home market apparently forced Canadian steel producers into moderate price reductions in order to maintain a reasonable flow of orders. Thus, when the prices of British and European steel fell sharply in 1954, Canadian prices showed small declines, varying from $4.00 per ton of pig iron to about 12½ cents per 100 lbs. on structurals, many bars and flat-rolled steel.

North American pricing policy in steel contrasts sharply with that prevailing in the United Kingdom and in Europe. Export prices of overseas producers vary greatly, in close sympathy with the level of demand. For example, in the period 1949 to 1953, British export prices for bars ranged from $70.00 per metric ton to $137.00. Belgium-Luxembourg prices fluctuated to an even greater extent. These wide variations appear to have had little influence on Canadian prices and imports. The product-analysis which follows shows that even though British and European prices for a number of steel forms dropped sharply in 1954, imports from these sources either decreased or rose only moderately, with the exception of structurals, for reasons explained in Part IV. On the other hand, imports from the United States rose substantially, even though prices had not decreased in that country. Shipments from overseas appear to have been more on a "hit and run" basis, without a sustained effort to take advantage of lower prices. No doubt this reflects limitations of supply plus the difficulties of developing long-term markets on the basis of rapidly-fluctuating price patterns.

In the price-comparisons that follow below, the term "delivered base price", when applied to either domestic shipments or imports, excludes, in all instances, "extras", exchange differentials, and customs duties (where such exist):

Foundry Pig: Canadian and United States f.o.b. mill prices for foundry pig have been closely parallel over the years. In many years they were identical—e.g., in 1950, $46.50 per ton and in August, 1956, $63.00. Even when not identical, differentials have not been great, seldom exceeding $2.00 per ton (approximately 4 p.c.). At these price levels, Canadian producers at Hamilton, Port Colborne and Sault Ste. Marie have retained the major share of the market in Ontario and Quebec, which accounts for over 90 p.c. of total Canadian consumption. The delivered base price of Canadian pig iron is substantially increased in Western Canada by high freight charges from Ontario despite freight allowances by Canadian producers. In Vancouver, the delivered base price of Canadian pig was $76.50 a ton in May, 1956, as against $66.25 in Toronto. As a result, a large proportion of the pig iron used in Western Canada is imported from non-Canadian sources. The Western market is, of course, very limited in size.

Hot-Rolled Carbon Bars: The f.o.b. mill price of bars was somewhat higher in Canada than in the United States until August, 1956, when one Canadian mill reduced its base price to slightly below the United States base and another established a price only slightly above the United States base. Canadian f.o.b. plant prices have for years ranged approximately from 10 to 60 cents per 100 lbs. above corresponding United States prices—or from 3 to nearly 15 p.c. In January, 1956, the differential was 15 cents (3·2 p.c.) above the United States price; in August, 1956, this differential was thus eliminated by one Canadian producer and cut in half by another. Canadian mills have supplied over 80 p.c. of the requirements of Ontario and Quebec, which provinces use more than 90 p.c. of the total Canadian supply of bars and rods. High freight charges to Western Canada increase the delivered base price of Eastern-produced bars by approximately $2.00 per 100 lbs. at Calgary, over Central Canada.

Because of favourable freight differentials, the delivered base prices of Canadian bars were either on the same level or below the delivered base prices of imported bars during 1955. In 1956, Canadian delivered base prices were well below those of the United States. The following statistics show delivered base prices as of the dates indicated; as of August, 1956, the differentials in delivered base prices widened:

Delivered Base Prices

(dollars per 100 lbs.)

	Montreal	Toronto	Hamilton
July 1, 1955			
Canadian	4·60	4·73	4·60
United States	5·06	4·73	4·71
January, 1956			
Canadian	4·80–5·06	4·93	4·80–4·95
United States	5·41	5·08	5·06

Standard Rails (85 lbs. per yd.): Canadian rail prices at the mills have been very similar to those prevailing in the United States. In some years there have been variations of a few dollars above or below the United States price, although on August 15, 1956, prices in both countries were identical at $101.50. Canadian rail prices had remained relatively stable during the period 1953-1955, in contrast with British prices, which were reduced from $96.00 in 1953 to $85.00 in 1954. The fluctuation in British prices has been of consequence in provinces which have ready access to ocean shipping. In British Columbia, substantial tonnages of British rails were imported in recent years for use on a local railway. The Canadian price in 1954 of $90.00 f.o.b. plant plus $39.80 rail freight (the published rate) amounted to $129.80 compared with a British c.i.f. price at Vancouver of $116.91. It is understood that in 1956 British prices have increased and are now well above Canadian levels. In discussing the loss of rail orders in coastal areas, the Canadian producers stated that it was difficult to set a special price for delivery to such areas since the price would also have to be extended to the large users in those other areas where by far the bulk of railways requirements are concentrated. Partly for this reason, they stated, they were unable to reduce their prices sufficiently to meet the British competition in Western Canada.

Structural Shapes: The mill prices of Canadian-made structurals were, until August, 1956, above those prevailing in the United States. In reality, however, f.o.b. mill prices have little practical application in Canada since adverse freight differentials force the one Canadian producer of heavy structurals to make substantial freight allowances in many of the important marketing points of Ontario, Quebec and other provinces. For example, the rail freight

rate from Sault Ste. Marie to Toronto was $11.00 per ton on May 1, 1956; this, added to the f.o.b. mill price of $96.00, made a total of $107.00. Algoma's delivered base price at Toronto was actually $4.40 below this figure. Much the same is true of other marketing points in Ontario. (See Appendix F).

In British Columbia, delivered base (and net) prices of Canadian structurals were substantially reduced following the introduction in 1955 of "agreed charges" by the railways. Delivered base prices fell from $135.50 (July, 1953) to $105.00 in July, 1955. A major portion of this reduction was attributable to lower freight charges. Because of this development, the delivered prices of Canadian structurals in Vancouver were only slightly higher than in Montreal on May 1, 1956: $116.00 base and $125.00 net in Vancouver, and $107.20 and $116.20 in Montreal. The prices for Vancouver involved some freight allowance from the base price at Sault Ste. Marie. The delivered base price of United States structurals at Vancouver was in the neighbourhood of $111.00 early in 1956.

Reference to Appendix F will show that prices for structurals from the United Kingdom have often been keenly competitive. In 1954, the delivered net price of a Canadian 12″ I beam at Montreal was $110.00 compared with $101.00 for corresponding British structurals. This latter was considerably below British prices in both previous and subsequent years and reflects a policy of adjusting prices with changing levels of demand (in 1953 the delivered net price of British structurals at Montreal was $109.20; in 1955, $115.40; and in January, 1956, $145.00). Canadian prices do not appear to have been reduced in 1954 to any extensive degree in Central Canada because of British competition. Although Canadian purchases in Britain in 1954 were greater by about 5,000 tons, imports from the United States increased by several times this amount. Steel producers in the United States did not reduce their prices in 1954 and since they were the chief source of competition the Canadian producer maintained his price level without extensive reductions.

On the West Coast, Canadian delivered prices were greatly in excess of British landed prices in 1953 and 1954, reflecting the high trans-Canada freight charges prior to the introduction of "agreed charges" for structurals in 1955 and also the general reduction in British steel export prices in 1954. Following the introduction of agreed-charge rates and increases in British prices in 1955 and 1956, Canadian delivered prices at Vancouver have been slightly below those for British structurals. It would appear, however, that the real competition for Canadian mills in Western Canada is from the United States, rather than from Britain.

Hot-Rolled Carbon Plates: The base prices of Canadian plate have always been above those in the United States. In 1953 and 1954, Canadian f.o.b. mill prices were $4·725 and $4·60 per 100 lbs., respectively, compared with $4·10 in both years in the United States—in percentage terms, from 12 to 15 p.c. In the latter half of 1955, this differential was reduced to 35 cents (7·7 p.c.) and in August, 1956, to 30 cents (6·2 p.c.). Canadian base prices have also been considerably higher than British export prices; in 1953 by 29·5 cents per 100 lbs., in 1954 by 64 cents, and in 1955 by 16 cents, for shipments to Montreal and Toronto. For shipments to Alberta and British Columbia, however, Canadian base prices have usually been below those for British plate since the introduction of "agreed charges" on plate in 1954.

In spite of reduced differentials, Canadian delivered base prices were somewhat higher in 1955 and 1956 than United States delivered base prices at most Canadian steel centres except Montreal. The differentials in Central Canada were usually small, since favourable freight charges considerably reduced the gap in f.o.b. mill prices, except for the Algoma mill. In Western Canada, Canadian delivered prices were usually well above those of imports from the United States, whereas delivered prices of British plate were considerably higher than Canadian prices in all of Canada in 1955 and 1956.

The sharp decline in British prices in 1954 had relatively little effect on Canadian prices. For example, while the f.o.b. base price at British ports for shipment to Central Canada fell by 47 cents per 100 lbs. between 1953 and 1954, Canadian f.o.b. plant base prices were reduced by only 12·5 cents for shipments to the same area. In spite of the relatively small reduction in the Canadian price, imports from all sources declined sharply in 1954. This phenomenon simply reflects the fact that the chief source of competition has been the United States, where prices have followed a steadily upward movement.

Hot-rolled Sheet: Canadian f.o.b. mill prices for hot-rolled sheet have always been above those prevailing in the United States. The differentials have nevertheless greatly diminished over the past ten years. This has resulted from the fact that the rate of price increase for sheet steel has been greater in the United States than in Canada. The following figures show the differentials:

	Differential[1] (cents per 100 lbs.)	Differential as p.c. of U.S. Base Price
1937	50	20·8
1947	45	18·0
1953	65	16·5
July 1, 1955	15 to 40	3·7 to 9·9
Jan., 1956	17·5	4·0
Aug. 15, 1956	12·5	2·7

[1] Amount in cents by which Canadian mill price exceeds U.S. mill price.

These differentials in mill prices were completely offset in 1955 and 1956 by favourable freight rates from Canadian mills to the main markets in Ontario and Quebec. As a consequence, the delivered base prices of Canadian hot-rolled sheet have usually been below those of delivered United States sheet:

Delivered Base Prices

(dollars per 100 lbs.)

	Montreal	Toronto
July 1, 1955		
Canadian	4·57–4·82	4·33–4·58
United States	4·81	4·48
January, 1956		
Canadian	4·87	4·63
United States	5·085	4·75

These prices clearly show that the Canadian mills have relied upon favourable freight differentials in establishing their delivered prices at competitive levels in Central Canada in 1955 and 1956.

In Western Canada, United States delivered prices are considerably lower than Canadian delivered prices. The Canadian mills face adverse freight differentials in these markets and have deducted freight allowances from their prices to offset at least partially the differences. The following figures indicate freight allowances made by Hamilton mills prior to August, 1956:

Shipping to—	Winnipeg	Calgary	Vancouver
		(dollars per 100 lbs.)	
Base price	4·50	4·50	4·50
Freight allowance	·05	·10–·50	·05

Only in Alberta are the freight allowances sizable, this being the only province where the freight differential against the Canadian mills is substantial. It is probable that the August, 1956, reduction in base price differentials will eliminate necessity for freight allowances to certain western points. The "agreed charge" from Eastern Canadian mills to Vancouver has placed Ontario mills in a much better position to price their sheet steel on a competitive basis in Vancouver. As a consequence, the delivered base price of Canadian sheet at Vancouver ranged from $5.20 to $5.55 per 100 lbs. in July, 1955, compared with $4.99 for steel of United States origin.

Cold-Rolled Sheet: Canadian base prices at the mills for cold-rolled sheet are above corresponding prices in the United States as the figures illustrate:

	Differential (cents per 100 lbs.)	Differential as p.c. of U.S. Base Price
1953	70	14·6
1954	57·5	12·0
1955	30	6·1
Jan. 1956	12·5	2·3
Aug. 1956	30	5·2

In most of Ontario and Quebec, however, delivered base prices for Canadian cold-rolled sheet were, prior to April, 1956, appreciably below delivered base prices of imported sheet, by reason of the very substantial freight advantages enjoyed by the Hamilton mills over United States suppliers. After that date, an increase in Canadian prices brought delivered base prices to approximately the same level but a part of the differential was restored in August, 1956, because of the fact that United States prices were then increased by more than the Canadian. Small tonnages are used in Manitoba and British Columbia, where prices for Canadian sheet are somewhat higher than the delivered base price of United States sheet:

Delivered Base Prices

(dollars per 100 lbs.)

	Montreal	Toronto	Winnipeg	Vancouver
July 1, 1955				
Canadian	5·62	5·38	6·72	6·35
United States	5·71	5·38	6·37	5·89
January, 1956				
Canadian	5·82	5·58	6·87	6·55
United States	6·085	5·755	6·745	6·265

These prices show that in Central Canada Canadian mills have been using favourable freight differentials to offset higher mill prices in establishing competitive price levels. On the other hand, unfavourable freight differentials to Western Canada have resulted in higher Canadian delivered base prices than have prevailed for delivered imports.

Prices of British cold-rolled sheet were above Canadian prices in July, 1955, at Montreal and Vancouver. In previous years they had been somewhat lower, as reflected in the following figures which were provided to the Board *on a duty paid basis:*

Prices of British Steel, c.i.f., Duty-Paid

(Tons of 2,000 lbs.)

	Montreal	Vancouver
July, 1953	$140·20	$144·00
" 1954	137·00	140·80
" 1955	147·00	151·00

In 1956, British prices rose far above North American levels as illustrated by the following, on the basis of the above table: in January, 1956, $159.00 at Montreal and $163.80 at Vancouver.

Tinplate: Until January, 1956, the f.o.b. mill price of hot-dip Canadian tinplate (1·25 lb. cokes) was substantially higher than the mill price in the United States. During the years 1950–July 1, 1955, the differential had ranged from $1.25 per 100 lbs. to 85 cents (14·4 to 11·6 p.c.). In October, 1955, the United States mills increased their prices, whereas Canadian mills did not; thus the mill prices of hot-dip tinplate came much closer together ($9.70 in Canada and $9.20 in the United States). During the first half of 1956, Canadian and United States prices each increased by 40 cents per 100 lbs., leaving the 50 cent differential unchanged.

Prices for electrolytic tinplate have followed much the same pattern as for the hot-dip. Between 1950 and July, 1955, Canadian mill prices were from $1.00 to 70 cents above corresponding prices in the United States. In October, 1955, the differential was reduced, however, to 30 cents. Early in 1956, prices for electrolytic tinplate were increased by 40 cents per 100 lbs. in both Canada and the United States, preserving the differential of 30 cents. Since tinplate sales are subject to contractual obligations with the users, it is unlikely that further changes in prices will take place before the contract termination dates in the fall of 1956.

Because of favourable freight differentials the delivered base prices of Canadian tinplate are well below those of delivered tinplate of United States origin, as is shown in the table:

Delivered Base Prices (.25 lb. Electrolytic)

(dollars per 100 lbs.)

	Montreal	Toronto	Chatham
July 1, 1955			
Canadian	8·57	8·33	8·47
United States	8·47	8·22	8·22
January, 1956			
Canadian	8·57	8·33	8·47
United States	9·27	9·02	9·02

Skelp: Canadian f.o.b. mill base prices for skelp have apparently been somewhat higher than corresponding prices in the United States. Between July, 1953, and August, 1956, f.o.b. mill base prices in the United States have increased from $75.00 per ton to $92.50. In that month the f.o.b. mill price of the largest Canadian producer was approximately $95.00.

Galvanized Sheet: It would appear that Canadian prices were well above corresponding prices in the United States until 1955, when the latter rose to slightly above the Canadian levels. By May, 1956, readjustments in Canadian

prices had again raised them to slightly (3 p.c.) above those of United States producers. In August, 1956, the Canadian base price for galvanized sheet was increased by $6.00 a ton, as against a $9.00 increase in the United States. Favourable freight differentials to consuming points in Central Canada more than offset the small price differential at the mills which remained after the price increase in August, 1956. This gave domestic producers a considerable advantage in their delivered base prices to this market, which utilizes over 75 p.c. of total Canadian consumption. Even in the Western Canadian market, Canadian producers apparently compete on equal terms freightwise, since nearly all mills in the United States producing galvanized steel are located in the Eastern half of that country. A possible exception is Vancouver which may benefit from lower water rates from the Eastern United States seaboard.

Stainless and Tool Steels:

There is one large producer of stainless and tool steels in Canada (Atlas Steels Limited) and one small producer (Vanadium Alloys Steel Canada Limited). In addition to these two domestic sources of supply a number of steel merchandising houses import such steels. The prices shown in Appendix F and those used as illustrations in this section have been supplied by Atlas Steels Limited, by import houses and by the British Iron and Steel Federation.

Domestic producers sell their *tool steels* on an f.o.b. warehouse basis but with free local delivery. Both of the domestic producers maintain warehouses, or have agents, across Canada. Atlas Steels Limited has warehouses at Montreal, Toronto, Hamilton, Welland, Windsor, Winnipeg, and Vancouver; Vanadium Alloys, at Montreal, Toronto, and London. In addition, at least one of the Canadian producers consigns stocks to agents in the Maritimes, northern Ontario, Alberta, and Victoria, B.C. Canadian-produced *stainless strip*, on the other hand, is usually sold direct from the mill. Imported specialty steel is usually sold f.o.b. the importer's warehouse. To facilitate comparisons, therefore, prices for domestic stainless steel are quoted f.o.b. warehouse.

Tool and stainless steels, like carbon steels, are priced on a "base" and a "net" system. The base prices vary by areas, usually taking into account freight costs. Canadian-produced stainless, for example, has the same base price in Ontario and Quebec; in Winnipeg there is a three-cent increase; in Edmonton it is six and a half cents higher; and in Vancouver, it is three and a half cents above prices in Central Canada. Prices of imported stainless steel vary in a somewhat similar manner, with the notable difference that prices in Ontario and Quebec are not uniform, reflecting higher transportation costs in laying down overseas steel in the former province. Certain industries, which enjoy "end use" tariff items, receive reductions from the normal base prices.

Extras may account for as much as 25 p.c. of the net price, although the average seems to be well below that. Approximately 70 p.c. of tool and stainless steel prices are subject to extras for grade, quality, pickling, size, length, cutting, normalizing, tolerance, analysis, packing, etc. The charges for extras in Canada and the United States are very similar. At the present time, extras for specialty steels of British origin are identical with those of Canadian production. Until recently this was not the case; British tool steels are said to have been sold with smaller charges for extras, thus tending to give such steels a competitive advantage. In examining prices, it will be noted that these are quoted in terms of cents or dollars per pound, since "specialty" steels are relatively costly. Base prices are used for comparisons, for the same reasons mentioned in the preceding section on carbon steels.

Stainless Steels. When considering prices for stainless steels, it must be borne in mind that certain of the chief alloying components, such as nickel, have been in short supply for a period of years. As a result, production of such

steels is limited, the available supplies of certain alloying metals being strictly rationed by the producers. Secondly, there is a high level of demand for these scarce steel alloys. Under such conditions of limited supply and high demand, variations in prices as between domestic products and imports do not seriously affect the ability of sellers to dispose of all of their stocks. In other words, a seller's market exists and there is little incentive or necessity to quote keenly competitive prices.

Prices for two of the more common types of stainless steel are set forth in Appendix F, namely types 304 and 316. The former is the most common type of stainless steel. The prices of domestically-produced 304 steel were usually slightly below those of similar imported steel in 1953 and 1954. In 1955, however, prices for British steel were below those for the domestic product; this resulted from relatively greater price increases over 1954 levels for the domestic steel. The Canadian prices are still below those of duty-paid steel of United States origin as illustrated by the following prices for type 304 at Toronto on July 1, 1956, in cents per pound:

	Canadian	United Kingdom	United States
Bars	·4275	·3951	·4363
Plates	·4550	·4560	·4641
Sheet	·5000	·4793	·5309

Canadian prices for type 316 are well above those for this type of steel of British origin, and have been so for a number of years, corresponding roughly with those for United States steel. A number of reasons have been advanced for the differential in Canadian and British prices: the demand in North America is for low carbon steel (below 0·03 carbon) which is somewhat more difficult to melt and therefore commands a better price; this type of steel is not being used extensively in Europe where more carbon is permitted. The suggestion has also been advanced that the differential might be explained by the fact that British producers charge a smaller premium for the addition of the 2 to 3 p.c. molybdenum required in this type of stainless. It may well result, of course, from a combination of these and other factors. The following figures show prices for type 316 on July 1, 1956, at Toronto, in cents per pound:

	Canadian	United Kingdom	United States[1]
Bars	·6450	·5083	·6498
Plates	·6475	·5693	·6858
Sheet	·6900	·5896	·7527

[1] Duty paid.

Tool Steels: The prices for domestic tool steels appear to be competitive with those of similar steels imported from the United Kingdom, particularly in the large markets of Ontario and Quebec (where prices for the domestic and imported products are almost identical). It would appear that this close relationship has come about through fairly vigorous competition. For example, in 1953, Canadian prices for certain specifications were considerably below those of imported steel; in 1954, on the other hand, British prices were lower for at least one specification. By 1955, prices of domestic and imported steel in the markets of Central Canada were almost identical, at considerably lower levels than had prevailed in preceding years for at least two specifications.

While prices in Central Canada are now very similar, those in Western Canada, from Winnipeg to Vancouver, show that Canadian tool steel sometimes sells at a premium of 3 or 4 cents per pound. This has been the case for a number of years and apparently reflects British policy of quoting uniform prices across the country, whereas domestic producers add at least part of the freight to their prices. In some cases, however, independent agents in Western Canada do add freight charges to the costs of British steel, bringing them up to the Canadian level.

PRODUCTION FACILITIES OF BASIC STEEL PRODUCERS

This section gives a brief outline of the expansion which has taken place in recent years in the production facilities of Canadian basic steel producers. It also attempts to suggest roughly what may be some of the advantages or disadvantages inherent in operating the various types of equipment at present used in Canada, in comparison with equipment in use in the United States.

In the light of the material set forth in this section, it is possible to make a number of general statements concerning the relative position of Canadian steelmaking equipment. For example, on the basis of size alone, smaller blast and open hearth furnaces are more costly to operate than larger furnaces, most of the differential being labour cost. The capacity of the average Canadian furnace is appreciably below that of the average furnace in the United States. However, since wage rates in Canada are below those in the United States, it is possible that the adverse cost differential resulting from differences in size would be in part offset. At the primary rolling mill stage, Canadian blooming and billet mills are usually not in a position to specialize to the same extent as United States mills. Canadian plate mills are of the reversing type, having a lower productivity ratio than continuous mills. The greater part of hot- and cold-rolled sheet and strip is produced on continuous or semi-continuous mills which compare favourably with those in the United States.

The comparisons which follow do not take into account differentials in wage rates between Canada and the United States.

Comparison of Equipment

Prior to World War II, the Canadian basic steel industry concentrated on the production of semi-fabricated forms, bars and rods, small structural shapes and rails. Output of hot- and cold-rolled sheet, tin plate and galvanized steel was on a relatively small scale; no skelp or sheet piling was made. The facilities of the industry were limited to furnaces, blooming and billet mills, bar and rail mills, a plate mill, and a number of 1-stand 2-high mills for rolling sheet and strip. From this comparatively elementary stage, the industry has in the last fifteen years taken noteworthy strides in diversifying output and installing new equipment. The emphasis has been shifted from bars, rails and shapes to flat-rolled products. Hundreds of millions of dollars have been expended in this transformation; thus, old equipment has been rebuilt and modernized while much new machinery, often of a so-called "continuous" type, has been installed. The result is that the Canadian industry, which by and large had lagged behind United States producers in the installation of continuous or semi-continuous mills in the thirties, is now in a much stronger position. Details regarding the new equipment of Canadian mills are to be found at the end of this section.

In the following sub-sections, a very cursory attempt is made to describe the types of equipment employed by Canadian basic steel producers at various stages of production and to compare its operation in a general manner with the equipment in use in United States mills.

Iron Smelting: As a general rule, and other things being equal, the larger the blast furnace the more economic it is to operate per unit of output, largely on the score of labour costs. The largest Canadian blast furnace is rated at 1,300 tons per day with three others rated at over 1,000 tons, five between 500 and 1,000 tons, and six at 500 tons or less per day. In contrast, of the blast furnaces operated by Bethlehem Steel at Lackawanna, Great Lakes Steel at Detroit, and Columbia-Geneva Steel at Geneva, one is rated at 1,900, six between 1,300 and 1,500, five between 1,000 and 1,300 and two between 800 and 1,000 tons per day. The fourteen furnaces of these three firms, chosen because of their proximity to Canadian steel markets, are capable of producing more per day than all fifteen Canadian furnaces together.

Over the past 25 years, larger and larger blast furnaces have been constructed, auxiliary equipment has been improved, and greater attention has been paid to the preparation of raw materials for charge to the furnace. Canadian construction has followed the general trend to larger furnaces, and the average rated daily capacity of operating Canadian blast furnaces is now about 700 tons per unit, still well below that of the blast furnaces operated by the aforementioned three United States plants, which would be about 1,200 tons a day.

Operating on the assumption that differences in cost in Canadian experience would be roughly equivalent to the experience of United States mills, it is considered that the cost of converting raw materials into one ton of pig iron in the operating Canadian furnace of average size would be higher than the cost in the average United States furnace mentioned above.

Approximately 50 p.c. of the pig iron produced in Canada comes from large competitive furnaces rated at 1,000 tons or over, about 35 p.c. from furnaces rated at 500 to 1,000 tons, and only 15 p.c. approximately from those of less than 500 tons per day. The larger furnaces are being pushed to produce the maximum possible; small furnaces are in two cases standing idle. The average daily capacity of Stelco's four blast furnaces is 850 tons per unit; of Algoma's five furnaces, 760 tons per unit; of Dofasco's furnace, 750 tons; of Dosco's two operating furnaces, 550 tons per unit; and of Canadian Furnace's operating furnace, 440 tons.

New blast furnaces constructed in Canada since the early 1940's have been as follows:

Year	Company	Hearth Diameter	Rated Daily Capacity (net tons)
1941	Stelco	23′ 6″	1,050
1942	Canadian Furnace	10′ 6″	140
1943	Algoma	25′	1,200
	Dosco	20′	600
1951	Dofasco	20′ 9″	750
1952	Stelco	28′	1,300
1953	Algoma	25′	1,200
1957	Dofasco	20′ 9″	750

These furnaces now account for about 60 p.c. of total Canadian capacity. In general, while they are comparatively modern and efficient, they are still of a smaller average size than those built by the aforementioned United States companies during the same period. While certain economies of operation may be realized through larger sized furnaces, other factors may be of much greater importance; for example, a firm may not wish to have its blast furnace capacity too greatly in excess of its steelmaking capacity, or it may not wish to be totally dependent on only one large furnace.

Steelmaking: From 85 to 90 p.c. of North American steel output is made in open hearth furnaces. Steel is also produced in electric furnaces and Bessemer converters, in about equal quantities; and a fourth process, the oxygen furnace, is now coming into vogue.

As with the blast furnace, economies of operating an open hearth furnace are in part related to size of furnace, but a number of other factors also contribute to differing costs of operation, e.g., oxygen utilization, fuel and composition of charge.

The size of open hearth furnaces has been increasing steadily in the United States and the Canadian trend has been along the same lines. Algoma now has fourteen open hearth furnaces, eight rated at 90 net tons per heat, four at 150 net tons per heat, and two at 330 net tons per heat. The last two were completed in 1953, the other furnaces having been enlarged from time to time. Dosco has five open hearth furnaces, two of 200-ton capacity per heat and three of 185-ton capacity. Of these, three were installed during 1940-42 to replace furnaces of much smaller capacity. Dosco now has a sixth open hearth under construction, with expected production of 200 net tons of steel per heat. Stelco now has thirteen furnaces, four of 110 tons per heat, five of 180 tons per heat, and four of 275 tons per heat. One 180-ton furnace was built in 1941 and the four 275-ton furnaces were built in 1952. Subsequent to the increase in capacity in this latter year, four smaller furnaces were dismantled. The capacity of the average Canadian furnace per heat is now 156 tons. Solely on the basis of differences in size of furnace, Canadian open hearth costs per ton of steel would probably be slightly greater than those in the United States mills mentioned. Since this conclusion does not take into account the other variable factors which influence unit costs of output, factors which cannot readily be measured, it is impossible to say whether, in fact, Canadian open hearth operating costs are above or below the average in the United States.

The use of oxygen has a very considerable bearing on productivity of open hearth furnaces. For example, the average annual open hearth capacity of Stelco furnaces, computed on the basis of normal 11-hour tap-to-tap time would be somewhere around 2,040,000 net tons. Using oxygen, the company now realizes a tap-to-tap cycle of 9 to 10 hours, a reduction that should increase production anywhere from 10 to 15 p.c. Many of the United States companies competing in the Canadian market have also adopted oxygenation, among them Bethlehem Steel, Great Lakes Steel, National Steel, and most of the plants of U.S. Steel. Savings in time result in a saving in capital investment, and depreciation is spread over a larger volume of production. Operating costs are increased substantially, however, since oxygen is a high-cost material. Stelco does not, as yet, produce its own oxygen and buys its material from independent sources.

Other Canadian companies have also realized increased productivity as a consequence of varying techniques. Both Algoma and Dosco are charging a higher proportion of pig iron than scrap, and, as a consequence, experience a saving in melt-down time and a hastening of the point at which chemical reaction begins. Traditionally, the open hearth charge has been 50 p.c. pig iron, 50 p.c. scrap. Canadian companies charging up to 70 p.c. pig iron have realized slight increases in productivity from furnaces of the same capacity.

A completely different process of steelmaking is used by Dofasco, with its two oxygen furnaces and a third under construction. This company still has four open hearths, but two only are now being used and it is likely their production will be sharply curtailed when the third oxygen furnace comes into operation. These oxygen furnaces operate on a 1-hour tap-to-tap cycle and can produce steel at about 50 tons an hour, a high rate compared with the 25 to 30 tons an hour from a modern 300-ton per heat open hearth furnace. A number of sources consider operating costs of producing steel by this process to be very competitive.

In addition, the oxygen process can operate on a 100 p.c. pig iron charge; such being the case, this process appears to have greater advantages during a period of high-cost scrap.

Dofasco's process is operated under licence from Brassert Oxygen Technique, A.G., of Zurich, Switzerland. Licences have now been extended to several United States steel companies and others are negotiating for the right to utilize the process. The first of these furnaces operating in the United States—that of McLouth Steel, Detroit—came into production this year.

Ingot Preparation: From the steelmaking furnace, the liquid metal is poured or teemed into ingot moulds, varying in size and shape in keeping with the capacity of primary and finishing mills and the nature and size of the material to be produced. Since Canadian mills cannot roll ingots in sizes as large as those that can be rolled in many United States mills, they require a larger number of moulds to handle an equivalent amount of steel per heat. The smaller size of most Canadian steel furnaces probably helps to offset the cost of investment in moulds per heat. Moulds have an average life of 60 heats.

Dofasco's costs of teeming are slightly higher per ingot mould than those of other mills. It has no primary mill to reduce the ingot to semi-finished steel and its plate mill serves as a breakdown or roughing mill for subsequent rolling operations. Because of this it must exercise extreme care in pouring the ingot and therefore "bottom pours" at a cost that is slightly higher than with top pouring. Top pouring is said to have the disadvantage in general of producing a poorer surface near the bottom of the ingot, due to splashing when the steel first enters the mould.

Ingot casting and stripping equipment, soaking pits and primary mills combine to create one of the larger investments in a modern steel mill. Elimination of this outlay is being attempted by Atlas Steels at Welland, where the company has embarked on a development to cast its steel direct into slabs or billets, in a "continuous casting" process. The equipment involved an investment of approximately $1,500,000, a small amount in relation to that required for conventional equipment. It is hoped that important operating economies can be effected by this process, together with higher yields. The increase in yield is particularly attractive in the production of high-cost steels. At the present time Atlas is using both the "continuous casting" process and the conventional ingot casting technique.

Primary Rolling Mills: Ingots are first rolled in blooming or slabbing mills, the products resulting being of a size which can be rolled in subsequent mills. In the United States, it is not unusual for a primary mill to feed most of its output to one subsequent mill. In this manner, advantages of specialization, such as a limited range of shapes, are realized. No Canadian mill is in a position to roll a bloom, for example, on a continuing 20-shift per week basis for direct feed into one finishing mill. Such practice would involve an output of the finished product much in excess of the demands of the Canadian market.

All blooming mills in Canada, and most in the United States, are reversing mills; in other words, the ingots are passed back and forth through the same set of rolls until the requisite reduction is achieved. Algoma's primary mill is a 2-high 44″ bloomer, feeding its billet mill, its rail and structural mill, and its continuous bar and strip mill; Atlas's is a 2-high 26″, feeding a billet mill, hot sheet mill and hot strip mill; Dosco's, a 40″, feeding a billet mill and rail mill; Stelco's a 44″ and 34″ in tandem feeding a billet mill, two bar mills and a plate/strip mill. Dofasco does not have a primary unit, rolling small sized ingots direct on its plate mill. No slabbing mills as such are in use in Canada, slabs being rolled from the ingot in the above-mentioned blooming mills.

Bethlehem Steel at Lackawanna has a 2-high 54″ reversing bloomer, which is said to roll slabs for its sheet/strip mill about two-thirds of the time, and blooms for its structural mills the remainder of the time. Its 44″ bloomer rolls for its rail/billet mill and its 28″ structural mill. Its 40″ bloomer feeds its continuous billet mill, with the remainder of output going to the 28″ structural mill.

Great Lakes Steel at Detroit has a 2-high 40″ reversing bloomer feeding its continuous billet and its 38″ strip mill. Its 46″ bloomer primarily rolls slabs for its 96″ sheet/strip mill. Its 48″ universal slabber, put into operation in 1953, is a specialty mill capable of achieving high production in rolling for only one succeeding mill, the 96″ sheet/strip mill.

All Canadian mills are presently operating either at capacity or close to capacity. Stelco cannot roll sufficient steel, at this stage, to satisfy the demands of its succeeding mills. In order to overcome the shortage, Stelco is constructing a third blooming mill and will be in a better position to obtain benefits from specialization.

Another type of primary mill is the billet mill, which is a specialty mill reducing products of the blooming mill to billet sizes for rolling in bar, rail and structural mills. All Canadian billet mills are continuous, Dosco's being a 7-stand, Algoma's and Stelco's 8-stand. In contrast, Great Lakes Steel has a 9-stand and Bethlehem at Lackawanna a 14-stand. In rolling the same bloom to the same dimensions, greater production is achieved with a greater number of stands because the billet can be rolled at a faster rate of speed. Another factor is the size of the bloom which the respective billet mills are capable of handling. In general, Canadian mills can take only a smaller size of bloom—Dosco, for example, on its 16″ continuous billet mill, usually takes a 6″ x 5″ bloom; Great Lakes, on its 21″ takes sections up to 8″ square. Billet mills capable of handling large blooms not only save time in the blooming mill but also receive a hotter steel and can roll to a wide range of sizes. Larger blooms and more stands increase productivity from a given unit.

Bethlehem and Great Lakes Steel have a high rate of productivity per operating hour as a consequence of size of bloom and number of stands, with sometimes two and even three pieces going through the mill at the same time.

Rail Mills: Productivity is somewhat comparable between Canadian and United States rail mills, the exception being the time lost when starting on a new section. On the average, one-half to one hour is lost while adjusting the mill to the required tolerances. With Canadian mills frequently rolling relatively short runs of a given section, as against relatively long runs in United States practice, the ratio of waste and lost time per ton of output is higher in Canada.

Dosco rolls rails about seven turns per week; its mill is not used for other purposes. Bethlehem rolls both rails and billets on one mill which is operating twenty turns a week. Algoma rolls rails and structurals on a combination mill, with differing stands but the same drives and motors. On turning from production of rails to production of structurals, a new set of stands is introduced into the line, the stands to be replaced being moved by crane; as a consequence, one set of stands is always idle.

Bar and Rod Mills: In the operation of bar and rod mills, the nature and the size of the products rolled play an important part in operating cost. Where the product rolled is to be further used in company operations, scheduling can be arranged to obtain longer runs. Where the product is produced for sale, scheduling involves more frequent roll and size changes as the mill moves from product to product. From actual figures supplied by mills in Canada and the United States, there appear to be substantial variations between mills in time lost through roll changes and adjustments. On the average, lost time does not appear to be greater in Canada, although one Canadian mill shows more time lost than other mills in either country.

Plate, Sheet and Strip Mills: Plate, sheet and strip are rolled in four types of mill: continuous, semi-continuous, 1-stand reversing and hand mills. A continuous mill consists of a series of roll stands in tandem; the metal moves through these stands in one direction only, thus passing through each stand once. A semi-continuous mill consists of one reversing, or multi-pass stand, and a number of single-pass continuous stands. A 1-stand reversing mill has reversing motors which move the metal back and forth through the stand a number of times. A hand mill is a multi-pass mill, the metal being returned by manual instead of mechanical power.

Dofasco and Stelco both operate 1-stand reversing plate mills, the former's an 84″ (wide) mill and the latter's a 110″ mill. Algoma can roll plate in narrow widths on its continuous bar and strip mill. Most United States plate mills are either continuous or semi-continuous.

Algoma has a 9-stand 30″ (wide) continuous hot strip mill; Stelco's 56″ hot strip mill consists of a reversing rougher (its plate mill) and a 6-stand continuous finishing train; Dofasco's 60″ hot mill is a 1-stand reversing mill. In the United States the large mills operate 10- and 11-stand continuous mills.

Algoma has a 30″ 1-stand reversing cold reducing mill; Dofasco has 34″, 36″, 42″ and 56″ 1-stand reversing cold reducing mills; Stelco has a 56″ 5-stand continuous cold reducing mill. Most cold reducing mills in the United States are continuous operations.

It is claimed that, as a general rule, continuous mills have higher productivity and lower costs per unit of output than semi-continuous or reversing mills. Practically all Canadian-produced plate is rolled on reversing mills while the major part of hot- and cold-rolled sheet and strip is produced on continuous or semi-continuous mills.

Tinning and Galvanizing Lines: Over 90 p.c. of tin plate and galvanized sheet produced in Canada is coated on modern, continuous production lines installed in recent years. These should be as efficient as similar mills in the United States. Dofasco has two electrolytic continuous tinning lines while Stelco has one. Each of these firms also has a continuous galvanizing line.

Development of Facilities

The change in the facilities of the various Canadian steel producers for the production of given items during the period 1939 to 1955 is shown in Appendix G.

The changes of most interest are as follows: Algoma in 1944 completed its 44″ blooming mill, electrified it in 1951, and subsequently dismantled its smaller 35″ mill in 1953; completed a 25″ continuous billet mill in 1942 and dismantled its 1-stand 32″ mill in 1954; completed a 32″ breakdown mill in 1952 for use in conjunction with its rail and structural mill; altered its 30″ rail and structural mill in 1954, and completed its 22″ structural mill for use as an alternative to the foregoing in 1954; completed a combination continuous bar and strip mill in 1952 with stands for the production of bars replaceable by those for the production of flat products; completed a 1-stand reversing 30″ cold strip mill in 1954. The only rolling mill units remaining relatively unchanged since 1939 are its 18″ bar mill and 12″ merchant bar mills. Capacity on both has been increased but the latter, a hand mill operation, is now being abandoned.

Atlas Steels expanded the ingot capacity of its plant during 1940-45 by more than six times its original size. In keeping with the gradual increase in capacity, the company installed a 1-stand 26″ reversing blooming mill in 1941 to replace its 16″ 3-high, 2-stand unit. In the same year a 1-stand billet mill and two bar mills were completed. In 1949, the company undertook installation of the first mill in Canada for the hot rolling of stainless steel sheet—a 4-stand 60″ mill.

In 1954, it completed the installation of a planetary strip mill for the production of stainless strip, and in the same year completed the installation of the first equipment in Canada for the continuous casting of steel.

In 1940, Dofasco installed a 1-stand 34″ reversing cold-rolling mill, and in 1941 a 36″ mill of the same type, giving it three units for the cold reduction of sheet and strip. In 1947, it began installation of an electrolytic tinning line, operations commencing in 1949 (the first unit of its type in Canada). In 1950, the company started its first blast furnace and a battery of 35 coke ovens. Its first hot mill for rolling sheet and strip, a 4-high 1-stand reversing mill, came into operation in 1954. In the meantime, the company had signed a contract with Brassert Oxygen Technique, A.G., of Zurich, Switzerland, under which it obtained rights for the Brassert process of making oxygen steel. Operation of two oxygen furnaces was commenced in October, 1954. About the same time the company began the construction of a 56″ 1-stand reversing cold-rolling mill and a continuous galvanizing unit, the former starting production in May, 1955, and the latter in June of the same year. The galvanizing line was the first such unit in Canada. Current expansion plans involve a second battery of coke ovens, another blast furnace, a third oxygen furnace, a new breakdown mill, and a second continuous annealing furnace.

Dosco's investment in recent years has been devoted mainly to the modernization of its existing equipment. During the war years, a new blast furnace and three new open hearths were constructed. The company has now undertaken to construct still another open hearth.

In 1941, Stelco installed its first plate mill, a 1-stand 110″ reversing unit; in 1945, its 56″ continuous hot strip mill; and in 1948, its continuous cold reduction mill, these last the first of their type in Canada. These mills have replaced high-labour-cost hand mills, which, while they were used until the late 1940's, were always a high-cost operation. In 1949, the company's electrolytic tinning line came into production and in 1955, its continuous galvanizer. Current expansion plans call for another blooming mill, a 1-stand reversing cold reduction mill, and additional annealing, pickling and finishing capacity.

Rolling mill equipment imported into Canada from the United States, when "of a class or kind made in Canada", is usually dutiable at a rate of $22\frac{1}{2}$ p.c. ad valorem; if "of a class or kind not made in Canada", the rate is usually $7\frac{1}{2}$ p.c. ad valorem.

IRON AND STEEL PRODUCTION: RAW MATERIALS AND SOURCES

Competitive superiority or inferiority in respect of raw materials is merely one of many factors making up the total competitive position of a steel company—but a very important factor. In view of that fact, this section will discuss sources of raw material for steel production and attempt to assess the position of the Canadian industry from the viewpoint of relative strength or weakness. Does the iron ore come from a captive source; if so, is it short-haul underground, long-haul open pit, or one of a variety of other combinations? Or is it purchased on the open market? Is coke bought on the open market or do captive sources provide coal suitable for carbonization in the coke ovens of Canadian steel mills? Where do fluxing materials come from and what part of the same is obtained from captive sources? All those named are materials used in the production of pig iron. Are Canadian costs of assembly higher or lower than the costs of the foreign mills selling in the Canadian market either pig iron or steel?

Pig iron is of course only one of the basic materials entering into the production of steel; the other is scrap. While the scrap market is sometimes chaotic, and at times widely fluctuating in price, in general the costs of scrap as they affect competitive position are comparatively consistent. While scrap is usually charged in quantities about equal to the amount of pig iron charged, it is less important as a competitive factor than the latter. In the following study more emphasis will be placed on pig iron than on scrap because it is in the cost of producing pig iron that competitive disadvantage or advantage is more likely to occur.

Materials Used in Pig Iron Production

Materials Used and Assembly Cost:

The blast furnace capacity of the companies producing pig iron in Canada is outlined in Appendix H, (1). The blast furnace operation is very much the same in all: it is essentially one of charging iron ore, fuel (coke) and flux (limestone and dolomite) into the top of a blast furnace and blowing heated air (blast) into the bottom. The ore in large part supplies the iron, the coke is the source of heat, and the flux combines with such impurities as silica to form slag. Other iron-bearing materials charged to the blast furnace include plant sinter (ore fines and flue dust), scrap, slag, roll scale, and mill cinder.

The proportion of the materials charged and the nature of the pig iron produced vary in keeping with the purity of the materials used. The average consumption of raw materials in Canadian and United States blast furnaces in recent years has been of the following order:

Blast Furnace Consumption of Iron Ore, Fuel and Flux per Ton of Pig Iron Produced

(tons of 2000 lbs.)

Canadian Average [1]

Year	Iron Ore[2]	Scrap	Coke	Flux
1955	1·895	·039	·869	·421
1954	1·956	·037	·890	·468
1953	1·962	·028	·931	·456
1948	1·968	·021	·976	·471
United States Average[3]				
1955	1·811	·049	·873	·387
1954	1·809	·050	·873	·395
1953	1·816	·053	·906	·418
1948	1·893	·035	·954	·440

[1] From Dominion Bureau of Statistics data.
[2] Includes iron ore, plant sinter, mill cinder, roll scale and slag.
[3] From American Iron and Steel Institute data.

While it is not at once obvious from the above, Canadian consumption of iron ore (crude or beneficiated) has been decreasing per ton of pig iron produced, with Fe compensation being provided by increasing amounts of plant sinter (ore fines and flue dust) in particular.

Prior to 1952, the flue dust recovered from blast furnace operations by Algoma was stockpiled for future use. A sintering machine with an annual capacity of 400,000 tons was brought into operation in that year, and current and stockpile flue dust are now being sintered for recharge to the blast furnaces. In the sinter

mixture, approximately 70 p.c. ore fines and 30 p.c. flue dust are used. In 1955, Stelco brought a 500,000 ton per year sintering machine into production to replace the 100,000-ton unit that had been operating prior to that date. Sintering equipment is also operated by Canadian Furnace and Dosco.

With an increasing proportion of prepared iron-bearing material (beneficiated iron ore and plant sinter) being charged to Canadian blast furnaces, there has been a concomitant decrease in the amount of coke and flux required. This has apparently brought about a small reduction in the cost of assembling raw materials at the blast furnace, a conclusion based on information filed by the applicant companies with the Dominion Bureau of Statistics. All the companies have their own accounting procedures and do not necessarily follow the same practices. In the following table, the average cost of scrap in 1955 is shown as being $9.75—a cost developed through internal accounting practices that differ substantially among companies. Since the blast furnace scrap used by each company is almost entirely its own, the cost shown does not necessarily bear any relation to open-market price. Accounting practices in connection with iron ore and coal also differ substantially; even though the materials are in part obtained from sources controlled by the reporting companies, reports show open-market pricing in some cases and captive pricing in others, with the average not necessarily having relation to the price actually paid. With the suggestion, therefore, that the following figures should be read only in context, average costs per ton of materials used in Canadian blast furnaces have been of the following order in recent years:

Average Cost per Ton of Materials Used in Canadian Blast Furnaces

Material	1948	1953	1954	1955
Crude iron ore				
(a) Canadian	$5.89	$7.24	$7.10	$8.06
(b) Foreign	4.85	8.22	8.29	8.33
Beneficiated iron ore				
(a) Canadian	4.94	8.95	8.85	9.08
(b) Foreign	—	—	—	—
Plant sinter, etc. [1]	4.44	9.22	9.41	9.47
Scrap	16.87	17.89	10.40	9.75
Limestone				
(a) Canadian	1.88	2.71	2.63	2.68
(b) Foreign	1.01	1.29	1.36	1.37
Dolomite				
(a) Canadian	1.90	1.59	1.57	1.56
(b) Foreign	1.86	1.87	—	—
Coke	12.17	13.86	13.91	13.38

[1] Includes plant sinter, mill cinder, roll scale and slag.

These *average* costs, when applied to the quantities of each material required to produce one ton of pig iron, show a total average assembly cost that has apparently been decreasing slightly during the years 1953-1955:

Average Cost of Materials Used to Produce One Ton of Pig Iron in Canada

Year	Iron Ore [1]	Scrap	Flux	Coke	Average Assembly Cost of Materials
1955	$16.13	$0.38	$0.83	$11.63	$28.97
1954	16.33	0.38	0.93	12.38	30.02
1953	16.29	0.50	0.91	12.90	30.60
1948	9.54	0.35	0.71	11.88	22.48

[1] Includes iron ore, plant sinter, mill cinder, roll scale and slag.

The conclusion suggested in the above table is valid only for the years in question and cannot be taken to indicate a trend in the future. It should be added also that the conclusion is valid only to the extent that the reporting companies have been consistent in their accounting practices during the years in question. A change in arbitrary costing of given materials necessarily would distort the picture.

Because of the fact that the totals shown in the foregoing tables are useful only as an indication of what would appear to be the cost of assembling materials for Canadian pig iron production, it would be highly improper to compare the data with costing in other countries. In any event, it would take years of research to obtain all the data required to effect a proper comparison.

While it is not feasible to make an effective comparison between Canadian costs and costs of foreign mills, it is possible to set down background information that is of value. Inland Steel, for example, obtains about 85 p.c. of its ore, 40 p.c. of its coal and all its limestone from captive sources. About 45 p.c. of its raw materials shipped by water are transported in company vessels: "... through either full or partial production of raw materials we have been able to deliver these materials to our plant at a lower cost than if we purchased them on the open market. If we had not produced or transported any of our raw materials in 1955, we estimate that our profits before taxes would have been lower by $10 million".* Inland's pig iron producing capacity is about 2,700,000 tons per annum, that of the Canadian industry 3,666,000 tons. What is the position of the Canadian industry with regard to captive sources and method of transportation? The following sections will treat in turn with each of the raw materials and their movement.

Iron Ore in Pig Iron Production:

Canadian production of iron ore in 1955 totalled 14,536,000 long tons,† making Canada the sixth largest producer in the world, exceeded only by the United States, Russia, France, Sweden, and the United Kingdom. Producing Canadian mines with their respective tonnages in recent years were as follows:

Iron Ore Production (Shipments) in Canada by Properties[1]

(tons of 2240 lbs.)

Properties	1955	1954	1953
Wabana (beneficiated hematite) (2)	2,377,237	2,155,731	2,399,821
Labrador—New Quebec (direct-shipping ore)	7,721,694	1,781,453	—
Marmora (pelletized magnetite concentrates)	195,776	—	—
Helen and Victoria (sinter) (3)	1,432,455	991,870	1,166,832
Steep Rock (direct-shipping ore)	2,265,555	1,156,654	1,301,377
Quinsam Lake (magnetite concentrates)	335,903	164,338	553,591
Texada Island (magnetite concentrates)	238,641	331,566	333,077

[1] Mineral Resources Information Circular, M.R.17, Dept. of Mines and Technical Surveys, Ottawa, March 29, 1956.

[2] Owned by Dominion Steel and Coal Corporation, Limited.

[3] Owned by Algoma Steel Corporation, Limited.

N.B. Calendar year not necessarily the basis for reporting; aggregate shipments in 1955 do not reconcile with production total of 14,536,000 tons shown by the Dominion Bureau of Statistics for 1955.

Production in Canada in 1951 exceeded Canadian blast furnace consumption and in 1955 was more than three times the requirements of Canadian mills. Current expansion and development programs will further enhance Canada's position as a world producer of iron ore, and overall production will probably reach 20,000,000 tons in 1956.

*Statement by Vice-President, i/c Raw Materials, Inland Steel Company, Annual Meeting, April 25, 1956.

†All tonnage figures with regard to iron ore are in long tons of 2240 lbs., unless otherwise indicated.

The outline of production and consumption since 1948 is shown in Appendix H, (2).

Record production by Canadian mines has in reality had little meaning for Canadian furnaces. These mills in recent years have obtained only about 25 p.c. of their ore from Canadian sources, the notable exception being Dosco, which obtains almost all its requirements from its own mines in Newfoundland. Algoma obtains approximately 30 p.c. of its ore from its own mines near Jamestown, Ontario. The other furnaces, however,—those operated by Canadian Furnace, Dofasco and Stelco—obtain by far the greater part of their iron ore from sources outside the country. There is little likelihood that the pattern will change substantially in the near future. Dosco and Algoma will probably continue to process their own ore to the maximum possible and Stelco will draw to a large extent from United States mines in which it has ownership interests.

Algoma and Stelco have in the past relied mainly on open-market United States ores for that portion of their requirements they cannot obtain from the mines they control. Dofasco has also relied heavily on United States ore since blowing in its blast furnace in 1951, as has also Canadian Furnace. Dosco has obtained supplies from both South America and the United States. With increasing Canadian ore production, however, Canadian furnaces may have the opportunity of using domestic ores to a greater extent.

Most of the new ore developments have been consumer-financed and new production from additional sources is likely to be tied up in much the same way. With hundreds of millions of dollars invested in plant and equipment, most major steel companies have always considered it desirable to control their own iron ore reserves. As direct-shipping reserves in the Mesabi area begin gradually to approach exhaustion, North American producers have begun to seek other sources and Canada has proven to be well-endowed with ores that appear to be economical to mine and transport.

The Labrador-New Quebec project, which will turn out some 12,000,000 tons during 1956, will allocate $16\frac{2}{3}$ p.c.* of its production to the two concession companies—Hollinger North Shore Exploration Company and Labrador Mining and Exploration Company—the balance to be split amongst the following in keeping with their equity interest in the Iron Ore Company of Canada:

Hanna Coal & Ore	27 p.c.
Republic Steel Corp.	25 p.c.
National Steel Corp.	20 p.c.
Youngstown Sheet & Tube	10 p.c.
Armco Steel	10 p.c.
Wheeling Steel	8 p.c.

Only that portion of the ore allocated to the concession companies and to Hanna Coal & Ore can be considered as being open-market ore, and a large part of it has already been committed to United States mills, under long-term contract. For example, Bethlehem Steel apparently has a contract with Hanna Coal & Ore to receive 30,000,000 tons during the course of a 25-year contract now in progress. During 1955, however, Dosco, Dofasco and Stelco received small quantities from the balance available, and shipments to Canadian mills will continue to grow slightly as production expands. Production of 20,000,000 tons annually is envisaged on completion of the seaway.

Algoma, Canadian Furnace and Stelco have received small quantities also from the tonnage produced by Steep Rock. Tonnage available has necessarily been small because of long-term commitments on the part of Steep Rock. Only

*Under the terms of agreement, the concession companies were to receive: (a) $\frac{1}{8}$ of the first 400 million tons of merchantable open-pit iron ore mined, (b) $\frac{1}{3}$ of all remaining merchantable open-pit iron ore, (c) $\frac{1}{3}$ of all other iron ore mined in the subleased properties—Financial Post Corporation Service.

in 1952, during the period of the steel strike in the United States, were there sizable quantities available to Canadian mills. Production increases, however, may make these high-grade ores more readily available. By the early 1960's, Steep Rock and its environs may have an annual capacity of 8,000,000 tons.

Other Canadian areas also hold promise for the future. These are dealt with in a later section, entitled "Reserves and New Sources".

Deposit Ownership—Canadian Mills:

A wide variety of factors influences the production costs of iron ore and all have a bearing on competitive position in the production of pig iron.

Dosco: operates three mines on Bell Island, Newfoundland. The deposits lie off the northwest corner of the island, under the floor of Conception Bay on the southeast coast of Newfoundland. Annual capacity runs to 2,800,000 tons. The deposits are controlled through subsidiaries, Dominion Wabana Ore Limited and Nova Scotia Steel & Coal Limited, the former being the operating company.

Ore is taken from submarine workings, with some of the haulages from face to deckhead being nearly three miles. After two crushing operations the ore is fed to a heavy-media separation plant for removal of waste rock. The analysis (dry basis) of the ore during 1955 averaged 50·46 p.c. Fe; 13·28 p.c. silica; 0·88 p.c. phosphorous and 1·67 p.c. moisture.

Because of high phosphorous and silica content, the ore poses special problems in smelting and affects the type of steel economically produced. The company obtains almost all of its ore from its own deposits. Small proportions are bought from South America, the United States and Labrador to complete its mix.

Its subsidiary mining company produces almost five times as much as the steel company can use. Shipments during 1955 amounted to 2,377,237 tons. Of this amount, 459,546 tons went to Sydney for consumption in the company's blast furnaces, 857,546 tons to the United Kingdom, 976,965 tons to West Germany, 62,180 tons to The Netherlands, and 21,000 tons to the United States.

A 9,000-foot conveyor belt system transports the concentrated ore across the island to the loading piers. That portion of the ore moving to Sydney travels a distance of approximately 390 miles.

Dofasco: does not have interests in producing mines and buys all its ore on the open market.

Stelco: through subsidiaries, has ownership interests in various producing mines whose shipments during 1955 were as follows:

Name and Range	Shipments	Ownership	
Balkan Mining Co. (Mesabi)	708,207 tons	Stelco	33⅓ p.c.
		Youngstown	66⅔
Hoyt Mining Co. (Mesabi)	799,859	Stelco	15
		Bethlehem Steel	45
		Int. Harvester	10
		Youngstown	10
		Republic	6
		Interlake	14
Lake Mining Co. (Mesabi)	1,046,434	Stelco	12½
		Bethlehem Steel	25
		Inland Steel	25
		Interlake	12½
		Youngstown	25

Name and Range.	Shipments	Ownership	
Utica Mining Co. (Mesabi)	606,545 tons	Stelco	$16\frac{2}{3}$ p.c.
		Bethlehem Steel	$33\frac{1}{3}$
		Interlake	$16\frac{2}{3}$
		Youngstown	$33\frac{1}{3}$
Western Mining Co. (Mesabi)	1,165,820	Stelco	50
		Interlake	50
Mauthe Mining Co. (Gogebic)	291,540	Stelco	25
		Interlake	25
		Youngstown	50
Fortune Lake Mine (Menominee)	375,509	Stelco	50
		Pickands Mather	50
Palmer Mining Co. (Marquette)	111,355	Stelco	10
		Interlake	59
		Youngstown	31
Erie Mining Co. (Mesabi) [1]	Test Shipments	Stelco	10
		Bethlehem Steel	45
		Interlake	10
		Youngstown	35
Hilton Mine (Bristol, Que.)		Stelco	50
		Bristol Que. Mining Co.	50[2]

[1] Commercial shipments to start in 1957.
[2] Owned jointly by Pickands Mather & Co., and Jones & Laughlin Steel Corporation. The share accruing to Pickands Mather will move in large part to Interlake Iron Co.

Stelco obtains ore in keeping with its equity interest, and shipments from those mines presently in production provide the company with about 50 p.c. of its total blast furnace requirements. All its ore, except that of the Mauthe Mining Company, comes from open-pit operations. However, increasing amounts must be concentrated as the mines gradually exhaust their reserves of direct-shipping ores and move closer and closer to the bottom of high-grade deposits. Stelco's position is representative of that facing almost all companies drawing from the Mesabi area. Somewhere around 50 p.c. of Stelco's ore must be put through a concentration process to eliminate gangue material.

Stelco has a 10 p.c. interest in the Erie Mining Company, which began construction of a plant for commercial production of pelletized taconite near Aurora, Minn., in 1954. Shipments will start in 1957. The plant is designed to produce 7,500,000 tons of 64 p.c. Fe pellets per year. Production may go as high as 10,000,000 tons per year by 1960. Mining is open-pit, with three tons of taconite to be mined to obtain one ton of iron ore pellets. The ore is widely dispersed in the rock, requiring fine grinding, magnetic separation and agglomeration. Shipment will be made from the head of the lakes.

During 1957, shipments will also start from the Hilton Mine in Bristol, Quebec, in which the company has a 50 p.c. interest. Mining will be by open-pit method on a scale sufficient to maintain an annual production of 600,000 tons of magnetite concentrates. The concentrates will be pelletized into a product containing approximately 66 p.c. iron and 3 p.c. silica. Shipment will be all-rail to Hamilton, with freight rates running somewhere around $2.50 per ton.

Algoma: through a subsidiary, actively mines deposits in the Michipicoten area north of Lake Superior, near Jamestown, on the Algoma Central Railway line. Its two mines, the Helen and the Victoria, are three miles east of Jamestown, with which they are connected by railway spur and road. Production is from underground.

As mined, the ore contains about 35 p.c. iron and must be beneficiated to bring it to acceptable blast furnace standard. About one-third of the ore is

concentrated in a sink-float plant before movement to the sintering plant for beneficiation. Sintering raises the iron content and changes the physical characteristics of the ore. The average analysis of the sintered ore for 1955 was:

	Natural	Dry
Iron	50·75 p.c.	51·13 p.c.
Manganese	2·87	2·89
Combined iron and manganese	53·62	54·02
Phosphorus	·022	·022
Silica	10·99	11·07
Alumina	1·82	1·83
Lime	2·79	2·81
Magnesia	8·31	8·37
Sulphur	·092	·093
Moisture	·74	
Gain by Ignition	1·04	

Algoma has obtained only 25-30 p.c. of its ore requirements from its own mines. The reasons are twofold: the sinter produced by its mining subsidiary contains almost 3 p.c. manganese and optimum manganese content of pig iron for Algoma's purposes is reached with about 30 p.c. "Algoma Sinter" charge; secondly, the chemical composition of the ore and the structure of the sinter make the material a premium product, enabling the company to sell "Algoma Sinter" and to use cheaper ores in substitution therefor in its own blast furnaces.

Total shipments of "Algoma Sinter" in 1955 amounted to 1,432,455 tons. About 30 p.c. moved to Sault Ste. Marie for consumption in Algoma's blast furnaces. This movement is all-rail, a distance of 183 miles. Sinter for open-market sale moves by rail 8 miles to Michipicoten Harbour and then by vessel to destination.

Canadian Furnace Company: does not have direct ownership interests in producing mines but through its parent company, the Algoma Steel Corporation, obtains a small part of its requirements from the sinter produced at Jamestown. Canadian Furnace produces only merchant pig iron and for reasons of chemical specification can use only a small amount of the manganiferous "Algoma Sinter" in such production.

Deposit Ownership—United States Mills:

Appendix H, (3) contains a listing of the most important United States mills competing on the Canadian market. Of those shown, the mills of United States Steel at Gary, Chicago and Geneva; of Bethlehem at Lackawanna; of Republic at Cleveland; of Great Lakes Steel at Detroit; of Kaiser at Fontana, and of Colorado Fuel & Iron at Pueblo are the most active.

These mills all draw on captive sources for a large part of their iron ore. United States Steel, Great Lakes (a subsidiary of National), Kaiser and Colorado Fuel are virtually self-sufficient, the others obtaining at least 50 p.c. of their requirements from deposits they control. A summary of the iron ore receipts of the largest steel companies is to be found in Appendix H, (4).

The mills on the Great Lakes are dependent to a large degree on ores from the Mesabi area, the greater part of which is mined by open-pit method. Some of the mines are approaching the economic limit for open-pit operation and costs are increasing substantially. However, in general, costing is still lower than that for extraction from underground. Another element of increasing cost is the extent of concentration now being practised. The University of Minnesota reports that more than one-third of the ore mined in the Mesabi and Vermilion ranges must now be concentrated to eliminate waste materials.

As the mills drawing on deposits in the Mesabi area approach more and more the exhaustion of high-grade ore, there has been a movement to sources outside the country. Republic and National have an interest in the Iron Ore Co. of Canada (Labrador-New Quebec) and are drawing an increasing proportion of their supplies from that project. Bethlehem is now drawing from Marmora, Ont., where open-pit operations produce a low-grade ore that is crushed, ground, concentrated magnetically and pelletized. United States Steel, while holding extraordinary reserves of low-cost, open-pit, direct-shipping ore in the Mesabi area, is also investigating the Canadian scene.

In addition to investment in the mining of foreign ore, Bethlehem, Republic and United States Steel have advanced funds for the commercial production of taconite pellets in the Mesabi area. Bethlehem is a partner in the Erie Mining Co., Republic in the Reserve Mining Co., and United States Steel has two plants in operation.

Mills in western United States are fed from captive sources that are comparatively close at hand.

Ore Used by United Kingdom Mills:

The bulk of the domestic ore used by United Kingdom mills comes from the bedded deposits of Oxfordshire, Northamptonshire, Lincolnshire, and, to a limited extent, from the Cleveland district of Yorkshire.

The deposits at Banbury, Oxfordshire, average 24·6 p.c. Fe; 9·6 p.c. silica; 0·25 p.c. phosphorous and 0·25 p.c. manganese.* The aggregate output of the area in 1950 was 1,500,000 tons; maximum in 1942 was 2,800,000 tons. Reserves are estimated at approximately 300,000,000 tons.

The Northamptonshire ironstone deposits near Corby average 35 p.c. Fe; 12 p.c. silica; 0·3 p.c. phosphorous and 0·15 p.c. manganese. Production in 1950 was 6,800,000 tons; maximum in 1942 was 10,300,000 tons. Reserves are estimated to approximate 2,200,000,000 tons.

The deposits at Frodingham and Scunthorpe in Lincolnshire average 24·5 p.c. Fe; 9 p.c. silica and 0·35 p.c. phosphorous. Output in 1950 was 3,100,000 tons; maximum in 1940 was 4,400,000 tons. Reserves are estimated to be 900,000,000 tons.

The Cleveland deposits in Yorkshire average 28·5 p.c. Fe; 12 p.c. silica; 0·5 p.c. phosphorous and 0·25 p.c. manganese. Output in 1950 was 1,000,000 tons; maximum in 1883, 6,800,000 tons. Reserves are estimated to be 290,000,000 tons.

Over the years there has been a great extension of and improvement in methods of preparing ore for blast furnace consumption. Apart from crushing and screening, definite steps have been taken to sinter the powdered ore, mixing it with coke breeze and flux. The process is applied not only to domestic ores but also to imported ores. There are now sinter plants at many of the large blast furnaces and some of the furnaces operate under burden which consists almost entirely of sinter.

Declining production from domestic deposits has created a greater demand for imported ores. Norway and Sweden are the most important sources. Major developments under way in these countries should allow exports to be increased substantially. Additional supplies should also be available from other customary sources, particularly North Africa.

Important new ore bodies developed since the war are also increasing their output. The United Kingdom has long-term contracts with producers in Labrador and Liberia. Supplies of high-grade ore are now being drawn from Russia also.

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*Information on United Kingdom deposits taken from "Survey of World Iron Ore Resources", United Nations, New York, 1955.

Consumption of iron ore from domestic and foreign sources for the years 1953-1954, together with an estimate for 1958, is found in Appendix H, (5). In 1958 foreign sources will apparently supply a greater proportion of total United Kingdom requirements than they have provided to date.

Production Costs in Captive Mines:

Obviously, material that can be mined and shipped without costly shaft development, haulage-way construction, extensive underground conveying systems, etc., should be superior from a commercial standpoint because of savings in cost. Where the overlying glacial drift is thin, the initial work may involve merely the removal of overburden. Underground, in contrast, requires development work and may involve costly outlay to block out and remove the ore for shipment.

Cost information on the two methods of working is rather limited; however, the following average data may be of interest and some help in arriving at approximate costs:

Average Production Costs of Open-Pit and Underground Ore Produced in Minnesota, 1948 and 1953[1]

	Open-Pit 1948	Operations 1953	Underground 1948	Operations 1953
Average cost per ton of development.....	$ .313	$ .685	$ .055	$ .064
Average cost per ton of mining and beneficiation				
(a) Labour and supplies................	.470	.743	2.505	3.888
(b) Other [2]............................	.405	.791	.390	.994
Average cost per ton of royalty paid [3]....	.349	.387	.566	.582
Average cost per ton of the above........	$1.537	$2.606	$3.516	$5.528

[1] Minnesota Mining Directory, 1955, University of Minnesota, Minneapolis, Minn.

[2] Includes: administration (local and district), depreciation, beneficiation (including crushing, screening), stockpile loading, and miscellaneous costs.

[3] Does not include royalty taxes.

The above figures are heavily weighted by the costing of United States Steel whose Oliver Mining Division is the largest operator on the Mesabi Range. Most of its ore comes from open-pit mines and the figures on open-pit ore reflect its very favourable position. It is doubted that open-pit costs of other producers in Minnesota would be as low as those of United States Steel.

The increase in costs over 1948 in the table is in large part a consequence of greater resort to concentration and, in part, of the increase in wages and the cost of supplies. Minnesota ores are becoming progressively leaner as the companies work closer and closer to the bottom of high-grade ore pockets. Stelco, for example, is finding that more than half of its captive ore must be concentrated. A wide variety of methods is used for eliminating gangue materials, the simplest being the washing of sand and other impurities from loose ore. Besides washing, concentration may include one or more of the following: crushing, sizing, jigging, heavy media separation, tabling, abrasive grinding, magnetic roasting, magnetic concentration, flotation, sintering, etc., all of which involve capital investment and run ore costs to a higher level.

Besides the Mesabi, Vermilion, and Cuyuna ranges in Minnesota, mills on or near the Great Lakes also draw on the Marquette range in upper Michigan, and the Gogebic and Menominee ranges on the borders of upper Michigan and Wisconsin. No definite information is available as to average mining costs in either Michigan or Wisconsin, but it is understood, that the levels in these states are slightly higher than Minnesota levels.

Another element of cost is beginning to make its appearance: agglomeration must now be added to the charges many of the consuming mills face in winning and preparing an ore suitable for blast furnace charge. Pelletizing operations have been undertaken on pilot plant scale for the past five or six years, resultant tests by consuming mills indicating that operations can be undertaken commercially. In pelletizing Lake Superior ores, companies are working with a very hard siliceous rock called taconite, or its first cousin, jasper. Under favourable conditions taconite contains 30 p.c. iron. Treatment costs are higher both in respect of investment and operation than anything hitherto known. Costs of removal are also substantially increased, since taconite is a very hard ore and new methods of drilling have had to be developed (jet piercing). As well, of course, almost three tons of ore must be produced to obtain a ton of iron ore pellets.

Investment costs should run to around $40.00 per ton of annual capacity in the commercial operation being set up by the Erie Mining Company at Aurora, Minnesota. This calculation is based on an investment total of $300,000,000 designed to provide a plant capable of producing somewhere between 7,500,000 and 10,000,000 tons of pellets annually.

Amortization costs and higher operating expenses should bring total expenses, per ton of taconite pellets produced, to a point where these will be close to or slightly higher than the costing of deep underground ore produced from Lake Superior ranges.

While higher costs are experienced in winning and treating, pellets are apparently preferable in the furnace to direct-shipping or concentrating-grade ores. Pellets are a select feed, harder and of higher grade (somewhere around 65 p.c. Fe), resulting in greater unit production per ton of charge, with consequent lower cost. Coke consumption is reduced per ton of pig iron produced, and limestone and dolomite are cut back where the blast furnace burden has a smaller amount of impurities to be fluxed. With the same blast furnace equipment, increasing amounts of pig iron can be produced, with concomitant savings in capital costs. Savings are also realized in transportation, since there is a higher content of iron per ton and, as well, there is a reduction in the amount of fines as a consequence of handling.

On balance, while costs at the railhead will be much higher than those faced thus far, consuming companies expect that savings at the furnace and through the furnace will offset the higher initial costs of winning and treating. The Erie Mining Co. will start commercial shipments in 1957, and within the not too distant future Stelco may expect to receive 750,000 tons annually. Other companies taking from the same source will be Bethlehem, Youngstown and Interlake. Stelco is also involved in a pelletizing operation at Bristol, Que., in partnership with Jones & Laughlin and Pickands Mather & Co. Bethlehem has started to receive pellets from its mine at Marmora, Ont. Republic Steel has also received its first commercial shipments of taconite pellets, these from the Reserve Mining Co. at Silver Bay, Minn. United States Steel has two plants in operation in the Lake Superior area.

Costs of Open-Market Ore:

The open-market ores purchased by Algoma, Canadian Furnace, Dofasco and Stelco are, for the most part, bought on a standard Lake Erie price base. The Lake Erie price base is usually established each year by the first large-sized contract published at the start of the shipping season, and is used by all mining companies as the price base for open-market ore for the balance of the navigation period. This price base relates to gross tons containing 51·50 p.c. natural iron, delivered at ports on Lake Erie. The price actually obtaining on each shipment

is developed by adjusting the base price upwards or downwards in keeping with the iron content and the impurities in the ore actually shipped. Transportation charges to other than Lake Erie ports are subject to negotiation.

The following prices, as published in the American Metal Market of June 26, 1956, became effective on January 1, 1956, and should remain in force throughout the year:

Lake Superior Iron Ores—Gross Tons, 51.50 p.c. iron natural, rail or vessel, lower lake ports:

Mesabi non-bessemer	$10.85
Mesabi bessemer	11.00
Old range non-bessemer	11.10
Old range bessemer	11.25
Open-hearth lump	12.10
High phosphorous	10.85

Buying at the open-market price may involve an element of cost not faced by other companies.

The greater part of the Labrador ores shipped from Seven Islands is taken by United States mills that have participated in financing the project. Somewhere around 3,000,000 tons were available for open-market purchase in 1955, and where this ore moved *up* the river it was landed at a price competitive with the Lake Erie price base. The ore is sold f.o.b., Seven Islands, and movement is under contract running to 1963 between the Iron Ore Company of Canada and eight shipping companies. Price to the purchaser at Hamilton was the same as it was at Lake Erie ports. Labrador ore moving *down* the St. Lawrence is sold f.o.b., Seven Islands.

Dosco buys about 10 p.c. of its requirements on the open market. The price is a negotiated price and has no relation to the Lake Erie base. Ore is obtained in part from Labrador and in part from South America. At one time, shipments were received from Utah, all rail, but the movement was extraordinary and there is very little likelihood of such shipments being repeated.

Dofasco is in a position differing from most of the mills with which it competes. The company does not have long-term contracts to assure it of continuing materials. It buys on what might be called a spot market. Because of close association between merchant ore houses and the major United States steel mills, it is possible that Dofasco may be forced into mining investment in order to set up an assured supply position. In the meantime, the company buys its iron ore on the open-market at the Lake Erie price plus additional transportation to Hamilton, placing it in a position of using higher cost ore in relation to almost all the mills with which it competes.

Stelco buys about 50 p.c. of its requirements on the open market. It has a close association with Pickands Mather & Company, a United States ore house. Pickands Mather manages all the properties from which Stelco draws captive ore.

Algoma and, ergo, *Canadian Furnace* buy between 70 and 75 p.c. of their combined requirements. On the other hand, however, Algoma Ore Properties sells substantial quantities on the open market. The nature of this interchange movement is in itself an assurance of continuing supply in the years to come. "Algoma Sinter" is a premium product and ores from captive or open-market sources will continue to be shipped to Algoma's furnaces in exchange for Algoma production. Another assurance of supply is to be found in the fact that the M.A. Hanna Company, one of the larger United States ore houses, has taken an

equity position in Algoma Steel. Small though it may be, it serves as an indication of good faith and creates the impression that cross-flows between the two will continue.

Transportation of Iron Ore:

Transportation is one of the most important cost factors with which steel mills have to contend. Relative strengths or weaknesses in connection with costs of raw materials are magnified or minimized in keeping with the distance from mine to blast furnace.

The cost of transporting iron ore and other raw materials is influenced by a number of considerations: the distance the ore must be hauled, the method of hauling, ownership of transportation facilities, commercial carrier rates, the terminal facilities involved, the ownership of such facilities and similar matters.

All Canadian companies have their own dock facilities. Only one, however, Dosco, has a direct ownership interest in ore-carrying vessels. Through a subsidiary, Dominion Shipping Co. Ltd., the company controls three ships used mainly for carrying bulk cargo. Algoma (and, ergo, Canadian Furnace) has a close connection with Canada Steamship Lines Ltd. A close relationship also exists between Dofasco and the Upper Lakes & St. Lawrence Transportation Company Limited.

Departure from dock schedules, delays in delivery, and cancelled cargoes during peak seasons can mean loss of production, with consequential loss of profit. To better control their ore movement, United States Steel, Bethlehem and National own or have an interest in bulk cargo vessels. Most United States mills own unloading facilities for receipt of cargo by water. United States Steel also controls the most important railroad moving ore from the Mesabi Range to upper lake ports—the Duluth, Mesabi & Iron Range Railway.

All mills pay the same charge on their Mesabi ores moving by rail to the lakehead, but differing charges are incurred in respect of water transport. Water distance from Duluth-Superior to Sault Ste. Marie is about 400 miles; to Ashtabula, Ohio, about 875 miles; and to Hamilton, Ontario, somewhere around 1,025 miles.

Algoma, in buying ore from Mesabi area, faces about 60 p.c. of the total lake-freight charge from the head of the lakes to Lake Erie ports, and its favourable position in this respect may amount to as much as 70 cents a ton. Where Lake Superior ores are transshipped and railed inland from Lake Erie ports, say to Youngstown or Pittsburgh, the overall advantage to Algoma might be as much as $2.30 per ton over the former and $2.80 over the latter. Almost three-quarters of Algoma's ore comes from Mesabi area sources.

For that portion of Algoma's ore obtained from its own mining operations, Algoma's position is even more favourable. The distance from Jamestown to the Sault is 183 miles and the ore moves via Algoma Central Railway. Against Mesabi ores moving to Lake Erie ports the company's advantage might be as much as $1.00 per ton. This additional 30 cent differential might also apply to Youngstown and Pittsburgh.

Algoma operates the only Canadian blast furnaces in a position of transportation advantage in respect of Mesabi ores moving to consuming mills on the Great Lakes. Canadian Furnace at Port Colborne, and Dofasco and Stelco at Hamilton, do not compare favourably with consuming mills at Lake Erie ports. While distances to Port Colborne are roughly the same as to Buffalo, the company has a problem of turn-round time and consequently higher costs. For Dofasco and Stelco, there is an additional day's steaming time in movement through the Welland Canal to Hamilton. Where iron ore is landed at Lake Erie ports for transshipment and movement by rail to inland mills, however, the total transportation charge from the mine to Youngstown or Pittsburgh would be higher than the overall charge paid by Canadian Furnace, Dofasco or Stelco.

The total charge for movement by common carriers from Mesabi mines to Buffalo, Youngstown and Pittsburgh in 1955 was approximately as follows

	Buffalo	Youngstown	Pittsburgh
Rail freight to Upper Lake ports	$1.18	$1.18	$1.18
Lake freight to Lake Erie ports	1.93	1.93	1.93
Rail freight to Youngstown	—	1.63	—
Rail freight to Pittsburgh	—	—	2.12
	$3.11	$4.74	$5.23

Transport costs would presumably be lower than the above for mills having their own transportation facilities.

All the mills on or near the Great Lakes have been substantially dependent on Lake Superior ores in the past. The Mesabi Range has been the most productive source and for that reason illustration of transportation cost has centred around movement from that source. Transportation charges on movement from other United States ports on Lake Superior are shown in Appendix H, (6).

Movement of ore from Canadian ports on Lake Superior is a somewhat different cost proposition. Steep Rock ore from the Atikokan area, 142 miles west of Port Arthur on Lake Superior and 40 miles north of the Canada-United States Border, has been moving in small part to Algoma, Dofasco, Canadian Furnace and Stelco, but the greater part has been going to United States mills. The ore is shipped from Port Arthur on Lake Superior. The rail freight from Steep Rock to point of loading, in 1955, was $1.20 a ton, with a dock charge of 15 cents, making for a higher total cost per ton than the $1.18 from Mesabi mines to Duluth-Superior.

"Algoma Sinter" for sale on the open market was railed from Jamestown to Michipicoten Harbour in 1955 at a cost of $0.575 per ton including dock charges. Steaming time from Michipicoten to Lake Erie ports is approximately two-thirds of that from the head of the Lakes, providing a still further saving in transportation cost in relation to Mesabi mines.

Labrador ore coming *up* the river has been moving in small part to Dofasco and Stelco, and in part to the mills of the companies financing the project. The ore is shipped by rail from Knob Lake to Seven Islands, a distance of 360 miles, loaded into vessels for movement to Contrecoeur, transshipped to canallers at that point and thence to its destination on the Great Lakes. Rail freight from Knob Lake to Seven Islands in 1955 was $3.00 per ton, with the participating principals providing their own rail cars. Open-market ore is purchased f.o.b., Seven Islands, with the water rate to destination set by contract over which the purchaser has no control. The Iron Ore Company of Canada has negotiated a contract lasting for eight years, in the interest of establishing an overall price at Lake Erie ports which would be competitive with ore from the Lake Superior area. The 1955 water rate from Seven Islands to Contrecoeur was $0.75, the transfer charge at Contrecoeur $0.75, the rate from Contrecoeur to Lake Erie ports $1.66, and the unloading charge $0.24, a total of $3.40 per ton.

Labrador ore moving *down* the river to Dosco is transported by company vessel as is the company's ore from Bell Island. Distance in the first case is about 360 miles and in the second case about 390 miles. Transportation costs would be about the lowest on the continent, certainly much lower than those faced by mills near the Great Lakes, and possibly as much as 60 p.c. lower than those of mills on the Great Lakes.

In summation, with regard to Lake Superior ore Algoma has a freight advantage over almost all competitors, domestic or foreign. Canadian Furnace, Dofasco and Stelco, to differing degrees, have an advantage over mills bearing an inland rail charge from Lake Erie ports (such as those at Youngstown and Pitts-

burgh) but are at a disadvantage in relation to mills on the Lakes (e.g., Lackawanna or Chicago). On Labrador ore, Canadian Furnace, Dofasco and Stelco are apparently in the same freight position as Lake Erie mills but better off than inland mills near the Great Lakes. Dosco has a transportation advantage over almost all competitors.

Ore Reserves and New Sources:

For obvious reasons, steel mills have in the past confined their search for ore to those bodies that could be most immediately and advantageously exploited. Now, with the impending exhaustion of high-grade, low-cost domestic ores, the United States steel industry is faced with the necessity of obtaining high-grade ores from foreign sources or developing the lower-grade domestic ores called taconites; not so the Canadian mills drawing on captive Canadian sources.

No definite figures are available as to the reserves held by *Dosco* in its Wabana deposits but indications are they would run to 3,000,000,000 tons or more. Of total shipments amounting to 2,377,237 tons in 1955 about 80 p.c. was sold on the open market. The company continues to produce sizable quantities for sale and can do so for years to come without prejudicing the position of its steel mill. It will still have difficulties with silica and phosphorous content, however, creating above-normal requirements of fluxing materials and increasing the cost of steel production.

Algoma is also in an excellent reserve position. Of total Sinter shipments amounting to 1,432,455 tons in 1955 about 70 p.c. was sold on the open market. In addition to the Helen and Victoria mines, now being worked, a third, the Alexander mine, is being brought into production, and a fourth, the Sir James mine in the Siderite Hill location, three miles east of the others, will come into production in 1957. Conservative estimates place reserves in these four deposits and others under Algoma's ownership at somewhere around 500,000,000 tons, less than one-fifth of which have been proven by drilling but whose potential may exceed the estimate published. Other properties and their estimated tonnages are as follows:

Bartlett (Britannia) property, one mile north of Hawk Junction on the Algoma Central Railway, where diamond drilling conducted for a length of 4,000 feet has indicated the availability of 30,000,000 tons, averaging 40 p.c. Fe, with low silica content.

Johnson location, 1,153 acres, one and one-half miles east of the Helen mine, where diamond drilling has been undertaken to test exposures of siderite ore but no conclusions drawn as to potential.

Goulais River Iron Range, twelve miles east of the Algoma Central Railway and sixty miles north of Sault-Ste-Marie, containing an estimated 150,000,000 tons of low-grade magnetic iron ore.

Goudreau pyrite property in Northern Ontario, Township 27, Range 26, where several million tons of pyrite material have been indicated by drilling.

Calabogie, Renfrew County, Eastern Ontario, where an iron ore deposit somewhere between 60,000,000 and 100,000,000 tons has been indicated. The final product would be routed to the Sault via Renfrew and Kingston, Ontario.

Stelco is in a position similar to most of the United States mills that have been drawing on Lake Superior ores. High-grade ores are approaching exhaustion and new sources must be found to ensure continued supply. The company's laid-down cost will begin to increase substantially as it starts to take pellets from Aurora, Minnesota, and Bristol, Quebec. Quantities from the

former should run to 750,000 tons a year, starting sometime in 1957, with possibly 1,000,000 tons being reached around 1960. Shipments from Bristol should be fairly steady, in the neighborhood of 300,000 tons a year.

Stelco supplies may be supplemented from other sources. At the present time the company holds a property in Clay and Howells Townships, some thirty miles northeast of Kapuskasing and 250 miles northwest of North Bay, Ontario, that appears to offer possibilities. A company—The Mattagami Mining Co. Ltd.—has been formed in association with Interlake Iron, although no immediate plans are in hand for development of the property.

Another source holding potential for Canadian firms is the by-product ore of non-ferrous refining operations. By-product sintered iron oxide is now being produced from Noranda iron sulphides at Port Robinson, Ontario, at a rate of 75,000 tons a year. Perhaps of even greater interest is the International Nickel plant at Sudbury to treat nickeliferous pyrrhotite. Upon completion of the company's program, this plant will have an annual output of 1,000,000 tons of 68 p.c. Fe pellets. Commercial production is under way, with Canadian companies—Algoma, Dofasco and Stelco—taking everything produced. Canadian mills have been experimenting with its use as an open-hearth charge to replace imported open-hearth lump.

United States Steel and Bethlehem will get their captive supplies from Lake Superior taconite and Venezuela although the former will still draw in large part from the open pit direct shipping reserves that it holds in the Lake Superior area. While there is no immediate pressure to seek additional sources of supply, United States Steel has also been exploring in the Quebec-Labrador area. The Cartier Mining Co., a subsidiary, has been active near Matonipi Lake, about 250 miles northeast of Lake St. John and 175 miles northwest of Seven Islands. Exploration and diamond drilling have also indicated very large tonnages of concentrating-grade iron-bearing material in the Mt. Wright area, southwest of the Quebec-Labrador boundary in New Quebec. Bethlehem will continue for some time to obtain a small proportion of its needs from Marmora, Ont. Republic will get its future supplies from Lake Superior taconite, Venezuela, Labrador and Liberia. National Steel will get its ore from Labrador but its chief supplier in the Lake Superior district, the M. A. Hanna Company, has been acquiring large tracts of taconite land.

The merchant ore houses have also become active on the Canadian scene. Canadian Cliffs Limited, a subsidiary of the Cleveland Cliffs Iron Company, of Cleveland, holds two groups of mining claims along the east shore of Lake Albanel and one group adjacent to the Temiscamie River, Mistassini territory, New Quebec. The company has also been continuing an exploration program on a large group of claims in the Kowkash Mining Division, Thunder Bay, Ont. The M. A. Hanna Company, another merchant ore house, is actively investigating a group of 56 claims on Burwash Lake, in the Sudbury district, through a subsidiary, Louphos Ore Limited.

It is doubtful that Venezuelan ores will compete farther inland than Pittsburgh, unless cost figures change substantially with the advent of the seaway. In the meantime, the practicality of consuming Venezuelan ore will be governed not so much by distance from deposit to American port as by rail freight and distance inland.

Labrador ore is high-cost transportation ore, with overall total to Lake Erie ports in 1955 somewhere around \$6.50 a gross ton; to Youngstown, \$8.00 and to Pittsburgh, \$8.50. Costs of mining are extremely low. The ore lies flat—and even outcrops along the way—making it easy to mine and load, unlike Mesabi ores which dip to increasing depths with concomitantly higher costs. Even with the advent of the seaway, however, overall costs to consuming mills may be somewhat comparable to the average laid-down cost of underground Minnesota ore.

In the case of taconite pellets, it is the matter of winning and treating that will serve to increase laid-down costs, although mills using the material feel there will be considerable savings through the furnace. There is a sizable mining and treating cost to overcome, nevertheless, and whether or not consuming mills will realize sufficient savings through lower coke and flux requirements and reduced capital cost in blast furnace investment, remains to be seen.

Summation re Iron Ore:

The nature and extent of deposit-ownership by Canadian mills is, on balance, apparently less favourable than the position of the United States mills competing in this market. Somewhere around 40 to 45 p.c. of the pig iron produced in Canada is made from captive iron ore. Of this amount close to 55 p.c. comes from underground mining, and the greater part is of concentrating or beneficiating grade. In comparison, United States mills in general apparently have obtained a higher percentage from captive sources with most of it open-pit now requiring concentration to a larger and larger extent. United States Steel, for example, obtains almost all its ore from captive sources and the greater part is open-pit.

While Algoma and Dosco presumably have favourable transportation, it is considered that the position of the Canadian industry as a whole is one of higher overall cost than that of the mills with which it competes. This situation may improve somewhat in the future as United States mills face exhaustion of traditional sources and go to higher-cost production or transportation material. The extent of such change as may come about and its effect on competitive position is a matter for speculation.

Coal and Coke in Pig Iron Production:

The coal used in steel making, when converted into coke and consumed in the production of pig iron, represents a very sizable proportion of the total cost of each ton of steel ingot. Its importance may be placed in proper perspective by stating that coke ranks next to iron ore in terms of weight per ton of pig iron produced; moreover, within the blast furnace itself, coke occupies about 70 p.c. of the available working capacity; also, matters such as those of sizing and physical characteristics are equally as important as volume and value.

Coal carbonized by Dosco, Dofasco, Stelco and Algoma amounted to 4,155,640 tons* in 1953; to 3,154,390 tons in 1954; and to 4,111,016 tons in 1955. Canadian Furnace does not produce its own coke.

Central Canadian coke plants are entirely dependent on importations of coal from the United States. Stelco and Algoma have invested heavily in producing coal mines in Pennsylvania and West Virginia; Dofasco, with its coke ovens in operation only since 1951, has not as yet sought to control its coal sources.

Deposit Ownership—Canadian Mills:

Dosco: controls, through ownership of common stock, the Dominion Coal Company Limited and its producing subsidiary, the Cumberland Railway and Coal Company. It also controls, through the medium of Nova Scotia Steel & Coal Company Ltd., the old Sydney Collieries Limited, and the Acadia Coal Co. Limited.

The Dominion and Old Sydney companies operate in the Cape Breton field, the Cumberland Company at Springhill and the Acadia in the Pictou coal area—all in the Province of Nova Scotia.

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*All tonnages in net tons of 2000 lbs.

The company's coke oven plant draws coal only from the mines operated by Dominion Coal. These are:

Name of Mine	*Location*
No. 4	Glace Bay
No. 12	New Waterford
No. 16	New Waterford
No. 18	New Waterford
No. 20	Glace Bay
No. 25	Gardiner Mines
No. 26	Glace Bay

While these mines are usually the only source of coking coal for the company's operation, there have been times when coal has been shipped from the Old Sydney mines on the other side of the harbor at Sydney. Such movement is extraordinary, and is limited by the cost via Canadian National Railways, running as high as $1.00 per ton for a distance amounting to approximately twenty miles. Coal is taken from Old Sydney collieries, therefore, only when tight supply arises in connection with coal from Dominion's mines.

Coal mined by Dominion Coal contains a high percentage of sulphur—in excess of 2 p.c. Such coal would not normally be used for metallurgical coking, in present-day practice; however, there is no more suitable coal available locally and no agent to serve as an adequate substitute. The blast furnace operations of the company are also handicapped by the poor physical properties of the coke. While inferior coke adds to the cost of producing steel, it does not necessarily impair its quality.

Washing operations are carried out at the Sydney steel mill, to which coal is moved by the captive Sydney & Louisburg Railway line. The washing plant will be replaced in the near future by two operations being set up close to producing mines.

Dosco operates 120 Koppers and 53 Koppers-Becker by-product coke ovens. Annual coal carbonization capacity is 921,000 tons. Output of Dominion Coal's mines in 1955 was 3,563,000 tons.

Stelco: The only mining operation owned completely by Stelco is Mather Collieries, Mather, Greene County, Pennsylvania. The company has held an interest in the property since 1918, purchasing complete control in 1952. Mather Collieries works a 75-inch seam, has a daily capacity of 3,700 tons, and reserves expected to last for 20 years. The coal is high-volatile, and is shipped from Mather via the Monongahela Railroad.

Stelco has a minority interest in two other producing Pennsylvania properties. The Mathies Coal Company, jointly owned by Stelco (13⅓ p.c.), Youngstown, National Steel and Pittsburgh Consolidation Coal Company, has a mine at Finleyville, Washington County, Pennsylvania, which was the fourth largest in the country in 1954 on the basis of coal produced. (See Appendix H, (7) for ranking of major coal mines owned by producing steel companies.) The mine has an expected life of 28 years. The seam is 64 inches and the daily capacity is 10,000 tons (on a 3-shift basis). The coal is shipped from Courtney via the Pennsylvania Railroad or the Monongahela River.

The other Pennsylvania mining company in which Stelco holds an interest is the Ontario Mining Company, formed in 1950 in association with Youngstown. Stelco holds a 33⅓ p.c. interest. The company has headquarters at Eighty-Four in Washington County, works a 66-inch seam, has a daily capacity of 1,000 tons, and ships from Bentleyville via the Pennsylvania Railroad.

Stelco also draws from the Olga Coal Company, set up in 1947 in partnership with Youngstown and Interlake Iron, to purchase the Carter Coal Company at Coalwood, West Virginia. Stelco's interest amounts to 10 p.c. The Company has two mines: Olga No. 1, working a 78-inch seam, having a daily capacity

of 4,700 tons and shipping from Coalwood via Norfolk & Western Railroad; Olga No. 2, working a similar seam with the same capacity and shipping from the same area via the same road.

Improvements to the company's coal-washing plant at Mather Collieries were completed in 1951. In the same year, construction was started on a coal-cleaning plant for the Olga Coal Company.

The production that could accrue to Stelco, given capacity operation of the mines in which it has an interest, would run to somewhere around 1,300,000 tons a year. Coal consumption by the company's 191 Wilputte coke ovens at Hamilton runs to around 1,700,000 tons a year.

Algoma: has two captive sources, the Cannelton Coal & Coke Company, and the Lake Superior Coal Company, both in West Virginia. The former operates three mines: Cannelton #3, working a 36-inch seam, with a daily capacity of 350 tons and a short-term life expectancy; Cannelton #100 and #100a, working a 66-inch and 40-inch seam, respectively, with a combined daily capacity of 2,700 tons and an expected life of 50 years. Coal from these mines is cleaned at the company's central cleaning plant at Cannelton and ships via New York Central.

The Lake Superior Coal Company operates two mines: Lake Superior #3, working a 63-inch seam, with a daily capacity of 1,000 tons and an expected life of 30 to 40 years; and Lake Superior #4, working a 48-inch seam, with a daily capacity of 1,200 tons and a 35-year life expectancy. Both these mines clean locally and ship from Superior, West Virginia, via Norfolk & Western Railway.

Only Cannelton #3 is owned; the other mining properties are leased.

The combined annual capacity of Algoma's producing mines is approximately 1,200,000 tons of coal, and the annual consumption of the company's coke ovens at the Sault (at full capacity) is slightly less than 2,000,000 tons of coal. The company operates 198 Koppers and 53 Wilputte by-product coke ovens.

Deposit Ownership—United States Mills:

Most of the larger United States steel mills either control their own coal reserves or have entered into long-term contracts to assure continuity of supply. In terms of production, in 1953, captive mines in Washington County, Pennsylvania, produced the largest tonnage for consumption by the larger United States steel mills, followed in order by captive mines in McDowell County, West Virginia, Greene County, Pennsylvania, and Fayette County, Pennsylvania (see Appendix H, (8)).

United States Steel feeds its mid-western mills from Kentucky and West Virginia, where somewhere around 30 p.c. of its total reserves are found, and Pennsylvania, containing 25 p.c. of the total. The company controls the largest United States coal producer, the Robena mine in Greene County, Pennsylvania, which shipped 4,102,938 tons in 1954. The Geneva plant of the company obtains its coal from Dragerton, Utah. This company obtains the greater part of its coal supplies from captive sources.

Bethlehem Steel has operating coal properties in the vicinities of Ellsworth, Ebensburg and Johnstown, Pennsylvania, and Century, Fairmount and Monterville, West Virginia.

Republic obtains a part of its coal requirements from captive coal properties located in Pennsylvania and Kentucky.

National Steel is a partner with Stelco in the Mathies Coal Company, and owns producing property in Washington County, Pennsylvania, and Weirton, West Virginia. It is also a partner in the Renton Coal Company, producing from mines in Allegheny County, Pennsylvania.

Colorado Fuel & Iron Corporation meets all of its Pueblo coal requirements with production from captive mines in Colorado. The company's plant at Tonawanda buys on the open market.

The coke ovens of the Kaiser Steel Corporation at Fontana, California, obtain their supplies from captive sources about 800 miles distant. About 10 p.c. of the company's requirements are purchased in Oklahoma and Arkansas.

Deposit Ownership—United Kingdom Mills:

United Kingdom mills do not own or control coking-coal reserves. The United Kingdom coal mining industry is completely under public ownership, having been taken over by the National Coal Board effective January 1, 1947. The Board operates about 900 collieries, of which those in the Board's Durham, Cumberland, Lancashire, South Wales, East Kent and Somerset Divisions are the most important from a coking-coal point of view.

Cost of Production of Coking-Coal:

Operating conditions in the United States central coal fields are much better than those facing Dosco's mines, with seams lying under areas that are rolling if not actually flat, with good roof and floor strata, and shallow cover. By contrast, the seams of the Sydney coal field slope seaward at about 35–40 degrees and are for the most part submarine, the roof and floor measures weak and the workings under heavy cover. In the flat-lying United States seams, entry can be made by shaft or slope almost at will, and the distance from the workings to the surface reduced as required. The submarine extension of the Sydney coal fields necessarily involves increasing haulage distance as the submarine workings project further from entries near the shoreline. Operating crews spend an average of two hours' time each day travelling to and from the work face. The dip of the seams in the Sydney fields gives rise generally to gradients beyond the limit where locomotives are serviceable. Rope haulage has been the general practice in bringing the coal to the surface and in some cases two flights are necessary.

The good roof and floor strata in United States mines promote working with a minimum of roof support and roadway maintenance. As close timbering is not required, heavy equipment is manoeuvreable. In contrast, the Sydney mines maintain about two-thirds of underground personnel on timbering and maintenance operation.

Shallow cover promotes ease of roof control and the sinking of ventilation shafts at convenient points. Ample ventilation can be supplied to all parts of United States mines and electricity can be safely and economically used for all purposes. Ventilation in Sydney mines involves pumping and movement of air at least three or four miles. Compressed air that has been the source of power in drilling operations in Sydney mines is now, in part, giving way to electrically-powered equipment, used with the addition of fire control devices.

Entry at will provides for easy disposal of water. The head against which it has to be pumped in United States mines is comparatively light.

In view of these differences in working conditions, the cost of producing coking-coal in Cape Breton coal fields is much higher than in Pennsylvania, West Virginia and Kentucky. Cost information is not available with regard to these latter operations; however, data on average value per ton, as shown in Appendix H, (8), presumably set the level above which average costs do not go. United Kingdom production costs are shown in Appendix H, (9). The United Kingdom data have been limited to costing in the Durham Division because of the importance this area holds as a supplier of coking-coal. It would appear that average United Kingdom costing is much higher than United States costing and almost as high as average Nova Scotia costing.

The following table indicates slightly decreasing average costing in Nova Scotia:

Nova Scotia Coal Mines—Operating Costs per Ton of Marketable Coal Produced, Years 1953-1955[1]

	1953		1954		1955	
Labour	$5.24	50·3 p.c.	$4.95	50·0 p.c.	$4.77	47·9 p.c.
Welfare Fund	.14	1·3	.13	1·3	.15	1·4
Vacation Pay	.40	3·8	.36	3·7	.35	3·5
Workmen's Compensation	.23	2·2	.22	2·2	.21	2·1
Maintenance, Repairs and Supplies	1.54	14·8	1.37	13·9	1.46	14·7
Total Mine Costs	7.55	72·4	7.03	71·1	6.94	69·6
Taxes and Insurance	.14	1·4	.15	1·5	.15	1·5
Power	.58	5·6	.55	5·6	.54	5·4
Royalties	.11	1·0	.11	1·1	.11	1·1
Administration and Supervision	.38	3·7	.35	3·6	.37	3·7
Miscellaneous Expenses	.04	·4	.04	·4	.03	·3
Total Costs to Tipple	8.80	84·5	8.23	83·3	8.14	81·6
Tipple and Washing Plant	.09	·8	.11	1·1	.12	1·2
Total Cost f.o.b. Cars	8.89	85·3	8.34	84·4	8.26	82·8
Depreciation	.30	2·9	.28	2·8	.32	3·2
Depletion	.02	·2	.02	·2	.02	·2
Bond and General Interest	.10	1·0	.11	1·1	.09	1·0
Distribution	1.10	10·6	1.14	11·5	1.27	12·8
Total Costs	10.41	100·0	9.89	100·0	9.96	100·0
Revenues	9.90		9.84		9.87	
Loss	.51		.05		.09	
Coal Produced (net ton)	5,562,873		5,761,902		5,663,614	
Tons Produced per Man-day	2·16		2·31		2·41	

[1] Dominion Coal Board—Annual Survey of Canadian Coal Mines Operating Costs and Revenues.

Somewhere around 90 p.c. of all coal mined in Nova Scotia in 1955 was produced by Dosco through its subsidiaries. As a consequence, the above averages are heavily weighted by the company's cost position. One point of difference would be the amounts shown for the tipple and washing plant, where charges in Dosco's operations are borne by the steel company itself and not shown in the accounts of its producing subsidiaries; another would be the costs in respect of distribution, in reality not properly attributable to sales made to the steel mill.

The company has undertaken a large-scale modernization program particularly in its mines owned by the Dominion Coal Co. Investment in more modern equipment by this latter company has been aided by government assistance. An Act passed by the Parliament of Canada in December, 1949—the Maritime Coal Production Assistance Act—provided for the establishment of a loan fund in the amount of $7,500,000, to be made available to Dominion Coal Co. at an interest rate of 3·5 p.c. No loan may exceed two-thirds of the cost of a contemplated project. Repayment is to be made in terms of 30 cents per ton of coal mined by the equipment on which the loan funds were expended. The amounts drawn by Dominion Coal during the life of the Act, to date, have been as follows:

Date	*Amount*
March 31, 1951	$ 358,242.92
March 31, 1952	1,266,282.00
March 31, 1953	1,065,000.00
March 31, 1954	1,174,000.00
March 31, 1955	562,000.00
March 31, 1956	248,000.00
Total	$4,673,524.92

The greater amount of the above monies has been spent on mechanical miners designed by Dominion Coal and built by an affiliated company. As of December 31, 1955, 21 units were in operation; 7 more are projected for operation in 1956. With increased mechanization, investment is also required in conveying equipment, locomotives, hoisting facilities, tipple plants, etc., and the overall rate of mechanization has been held back by the investment required in ancillary devices.

Differences in degree of mechanization, physical conditions and operating difficulties have a pronounced effect on productivity per man. The average ton per man per day in Washington County, Pa., was 6·51 tons; in McDowell County, West Virginia, 6·19 tons; in Greene County, Pa., 6·57 tons; and in Fayette County, Pa., 5·60 tons; these are extremely high averages in comparison with the 2·16 and 1·02 tons achieved in Nova Scotia and the United Kingdom (Durham Division) mines, respectively, during 1953.

Labour accounts for close upon two-thirds of the total cost of producing coal. Productivity per man therefore heavily weights the cost picture, affecting the price at which coal can be sold at a profit. The average value per ton at minehead in both Washington and McDowell Counties in 1953 was $6.17; in Greene, $5.91; and in Fayette, $6.13. The average proceeds per ton in Nova Scotia in 1953 was $9.90—an amount insufficient to cover production costs, and a loss of 51 cents per ton was incurred. In the Durham Division, average pithead proceeds in 1953 were $9.18 with a loss (before charging interest) of 17 cents per ton.

The average value for United States coal includes an amount for coking-coal used by the producer (captive mine) at the average price that might have been received if such coal had been sold commercially. The average proceeds for Nova Scotia coal do not necessarily reflect an open-market price for coal sold by Dominion Coal to its parent, Dosco. In the United Kingdom the National Coal Board controls both production and price, and inter-company relation cannot affect sale price.

Costs of Transporting Coal:

Dosco's coke oven plants are located within 15 to 20 miles of the entries to its mining operations. Coal brought to the minehead is crushed and screened and the product is transported by company rail-line to the washing plant at the steel mill.

Coal received by Stelco from its Coalwood properties in West Virginia is routed to Toledo and then transshipped to Hamilton by vessel. Coal from Pennsylvania is transshipped at Ashtabula. Inland rail costs in both cases are higher than, or at least equal to, those of most of the United States mills with which it competes. In addition, the company has to bear a lake freight charge, placing it in a still greater position of disadvantage. Freight costs to Hamilton are almost equal to the f.o.b. minehead price.

Coal received by Dofasco is purchased f.o.b. docks at Lake Erie ports, or f.o.b. minehead from where it is railed to Toledo and Sandusky for transshipment. Dofasco's position is the same as Stelco's in respect of transportation costs. It faces a higher inland rail charge than most United States mills, has to bear the expense of Lake Erie dock charges, and has the additional cost of movement through the Welland Canal to Hamilton.

All coal received by Algoma is routed to Toledo and then transshipped to the Sault by vessel. The transportation factor as an element of cost apparently has a slightly lighter incidence for Algoma than for Hamilton because the coal is in large part moved by ore or grain carriers returning to the head of the lakes for cargo.

Coal movement by water to central Canadian mills is a matter for rate negotiation. Algoma, in large part, receives its coal by Canada Steamship Line vessels and Dofasco by Upper Lakes & St. Lawrence Transportation Co. vessels.

Apart from disadvantage as a consequence of distance from producing mine, central Canadian mills are also adversely affected by inventory costs. The companies find themselves having to stockpile for the period of freeze-over. Inventory costs are substantial in light of the fact that coal consumed averaged 340,000 tons per month in 1955; and Algoma, Dofasco and Stelco must in each year lay in sufficient quantities to last from December to April.

United States mills using barge transportation—such as United States Steel and Jones & Laughlin—can convert to all-rail movement and still be in a better position in respect of transportation, let alone inventory, costs. United Kingdom blast furnaces, as consumers of carbonized coal, are in general located in a transportation position that is not as favourable as Dosco's but comparable to a large extent with United States transportation distances.

Because of problems of source and transportation cost faced by central Canadian mills, provision was made in the tariff some years ago for drawback of the customs duties otherwise payable on coal imported into Canada. Subsequently, in order to equalize the position of all Canadian steel mills, the Canadian Coal Equality Act was enacted, providing that, as long as the said drawback item remained in effect, Dosco would receive 49·5 cents per ton for Canadian bituminous coal manufactured into coke and used to produce iron and steel. The amounts paid to Dosco under the provisions of this Act in 1948 and 1953-1955, inclusive, were as follows:

Year	*Amount*
1948	$352,514.22
1953	382,685.49
1954	243,637.00
1955	298,551.31

Coke and By-Product Materials:

The coke produced by Dosco, Dofasco, Stelco and Algoma during 1953 was 2,858,171 tons; in 1954, 2,223,426 tons; in 1955, 2,898,015 tons. Of the coke produced only a small percentage was sold for domestic and industrial use.

The largest producer for industrial sale is Algoma, followed in order by Dosco and Stelco. Dofasco has not sold any coke in recent years; rather, it has had to buy additional quantities on occasion to supplement the amount produced in its own coke ovens. The ideal sizing for better blast furnace operation is two to three inches and Algoma, in its position of surplus capacity, may be in a position to exercise greater selectivity in obtaining a better feed. Uniformity of coke sizing provides better gas-to-ore contact and consequently better blast furnace operation.

Comparisons between average Canadian and United States coke and by-product yields are found in Appendix H, (10).

Coke yields are somewhat comparable, with differences a consequence of greenness, coke-oven technique, height of oven, etc. Most coke ovens used by Canadian steel producers are standardized on the Koppers or Wilputte designs. A program of modernization and new construction has placed the Canadian industry in a position of operating equipment that is among the most modern on the continent.

The production of breeze as a consequence of crushing and screening to obtain uniformity of coke size is also comparable in terms of averages. Breeze is used in sintering operations, and all Canadian mills, other than Dofasco, are able to use this material to the fullest extent.

Generally, 15 to 30 p.c. of low- or medium-volatile coals are used in a blend with high-volatile coal. Canadian practice in respect of volatility averages around 80 p.c. high-volatile. Low-volatile and medium-volatile coking-coals are critical materials from a supply point of view and of high cost because of the variety of consumers that seek to use it.

Coke-oven gas is in large part used in the coking process itself or in allied steel production facilities. Their residual balance is sold by Algoma and Stelco to local municipal utilities. As natural gas becomes available in the Hamilton area, however, the coke oven gas will be backed up into the steel plant. In that event, it may find outlet in an ammonia plant, utilizing hydrogen from the gas. A plant of such nature is already being operated by United States Steel at Geneva.

The yields of light oils in Canadian coke-oven practice are higher than the United States average, the Canadian average being heavily weighted by Stelco production. While the overall yield of crude light oils is higher than the United States average, distillation is not carried out to the same extent as it is in the large coking operations in the United States. Economic distillation is a function of volume in large part and only Stelco has a continuous still in operation. Its supplies of crude light oil are supplemented by materials originating with Dofasco and Hamilton By-product Coke Ovens.

Canadian coal-tar production is higher than the United States average, the tar in all cases being sold to independent companies for further refining. Ammonium sulphate, yieldwise slightly lower than the United States average, is sold as a fertilizer.

On balance, the returns accruing to Canadian steel companies as a consequence of by-product recovery operations are lower than the values realized by United States mills. The basic difference is the degree to which United States practice undertakes to distill crude light oils. Transportation of by-products is also an important factor, reducing the returns to the producing companies.

Comparisons cannot be developed between Canadian and United Kingdom practice because of a lack of information in connection with the latter.

Open-Market Coke:

Canadian Furnace buys its coke on the open market. Supplies are brought from Montreal, Chicago and Detroit, with the company leaning more to United States sources during periods of tight supply.

Of the other four pig-iron producers, only Dofasco has purchased on the open market. The company has been able to meet its requirements in most years and only under exceptional circumstances has it bought from an independent source.

Almost all the major United States steel mills are directly or indirectly self-sufficient in coking capacity, but not all the United Kingdom blast furnaces operate their own coke ovens. In 1953 only about two-thirds of their coking requirements were produced in their own ovens, the balance in that year (almost 3,700,000 tons) being purchased from the National Coal Board and other suppliers. From reports released by the iron and steel industry in the United Kingdom, it would appear that additional supplies of coke needed to meet future requirements will be provided by the expansion of captive coke-oven capacity at iron and steel mills.

Summation re Coal and Coke:

Vis-a-vis their chief foreign competitors, therefore, the foregoing indicates higher coal costs to Dosco; higher transportation costs to Algoma, Dofasco and Stelco; and higher coke costs to Canadian Furnace Co. Ltd. These costs, coupled with smaller financial returns from by-product recovery operations, place Canadian pig iron producers at a competitive disadvantage in comparison with the majority of the foreign mills competing in the Canadian market.

Fluxing Materials in Pig Iron Production:

The greater the amount of impurities in the raw material charged to a blast furnace, the greater will be the amount of fluxing materials required to control properly the quality of the hot metal produced. The most important fluxing

materials are limestone and dolomite (virtually interchangeable) which combine with impurities to form a slag during the process of smelting. The most important impurities found in ores used by Canadian mills are silica and phosphorus. Dosco has also a problem of sulphur content, introduced to the blast furnace in the burning of coke produced from its Sydney coals.

Flux charged to Canadian blast furnaces per ton of pig iron produced, in comparison with the United States average, has been as follows in recent years:

Consumption of Flux Per Ton of Pig Iron Produced
Canadian and United States Averages

(tons of 2000 lbs.)

Year	Canadian Average	United States Average
1955	·421	·387
1954	·468	·395
1953	·456	·418
1948	·471	·440

The Canadian average stands at a higher level than the United States average largely because of the impurities found in Dosco's ore and coke: the silica content in 1955 was 13·28 p.c., the phosphorous content 0·88 p.c. and the coal used in the production of coke had in excess of 2 p.c. sulphur. By reason of the Dosco situation, the Canadian industry as a whole charges a greater amount of flux per ton of pig iron than is charged in average United States practice.

Dosco's limestone is obtained from captive deposits in Aguathuna, Nfld. Its stone is high-calcium, open-pit, low-cost transportation material. Shipments are made from Port au Port, Nfld. to Sydney, a distance of about 180 miles, via company vessel. The company does not use dolomite as a fluxing material.

High calcium limestone sufficiently pure to provide Canadian steel producers with the type of material suitable for use as a flux is available in only a few areas. One of these is the Beachville, Ontario, area, where the Steel Company of Canada has acquired deposits through its subsidiary, Chemical Lime Limited. Chemical Lime was organized in 1949 to acquire deposits from which Stelco had been buying on a contract basis. The rock is high-calcium, low in silica, open-pit, comparatively inexpensive as to transportation. It is moved all-rail from Beachville to Hamilton, a distance of approximately 60 miles. Towards the close of 1951, Chemical Lime placed a heavy-duty electric shovel, diesel quarry trucks and a crushing, screening and loading plant into operation at a cost of $970,000. The dolomite used by Stelco is obtained from Dundas, Ontario, where the Steetley Company of Canada Limited produces a lump or calcined material for use as a fluxing agent. Dundas is in the immediate Hamilton area.

Dofasco does not have captive limestone nor dolomite sources. The former it purchases from Gypsum Lime & Alabastine Canada Limited (Beachville) as well as from the Michigan Limestone and Chemical Division of United States Steel, producing limestone and lime from deposits in the northern part of lower Michigan. Limestone from Beachville is moved all-rail and from Michigan via bulk lake carrier. Dolomite is purchased from Dundas.

Algoma also obtains limestone and lime from the Michigan Lime & Chemical Division of United States Steel. Michigan Lime produces and ships material from the immediate area in which Algoma holds extensive properties in its own right. Algoma has not produced from its own deposits in recent years. The limestone is obtained on an open-market basis, shipment to Sault Ste. Marie being low-cost short-haul by water. In recent years, Algoma has not used dolomite as a fluxing material in blast furnace operation.

Most United States steel mills have captive sources of fluxing materials. United States Steel takes from its deposits in Michigan and from quarries worked in Pennsylvania. Dolomite supplies are drawn from West Virginia, all-rail to consuming mills. Bethlehem has producing limestone properties in Pennsylvania and undeveloped properties in New Jersey, Pennsylvania and West Virginia. The company also has a 12·5 p.c. interest in the Presque Isle Corporation organized in 1952 to develop and produce from 4,500 acres leased in the northern section of lower Michigan. It is estimated that there is an underlying deposit of more than 300,000,000 tons of metallurgical limestone in the area. Operations were started in 1955. Republic Steel, with a 35 p.c. interest, is also one of the five steel companies in the Presque Isle Corporation. Union Drawn Steel Company Limited, a subsidiary at Hamilton, Ontario, has recently acquired 1,100 acres of land near Embro, Ontario, in the general Beachville area. National Steel has an interest in the Presque Isle Corporation. Mills in the Western States such as Fontana, Geneva and Pueblo have captive sources on which they draw.

Materials Used in Steel-Ingot Production

Steel differs chemically from pig iron in that it contains a very small percentage of silicon, normally has a much lower carbon content, and sulphur and phosphorus are reduced to a very small fraction.

The greater part of the steel (carbon steel) produced in Canada has been made by open-hearth process and most of the open-hearth capacity in Canada is to be found in the plants of four of the basic steel producers—Algoma, Dofasco, Dosco, and Stelco. The basic steel producers (with the exception of Algoma) also have electric furnace capacity (low alloy steel) but in this context such equipment is not given a place of importance. For equipment and capacity data, see Appendix H, (11).

Material charged to the steel furnaces of Algoma, Dofasco, Dosco, and Stelco has been as follows in recent years:

Materials Charged to Steel Furnaces by Basic Steel Producers 1948, and 1953-1955[1]

(tons of 2000 lbs.)

Material [2]	1948	1953	1954	1955
Pig Iron:				
Own make	1,671,774	2,300,646	1,759,610	2,545,522
Purchased	3,635	—	—	—
Scrap Iron or Steel:				
Own make	818,778	1,043,635	881,291	1,134,196
Purchased	639,396	784,869	443,336	835,254
Iron Ore:				
Crude	161,115	266,479	200,168	351,877
Treated	2,565	5,241	11,570	49,706
Dolomite:				
Crude	107,027	103,007	87,449	95,163
Calcined	20,475	63,608	47,386	86,073
Fluorspar	18,401	19,827	14,390	16,679
Lime	64,660	75,586	73,265	125,812
Limestone	236,121	294,223	176,631	210,885
Ferro-manganese alloys [3]	25,572	34,192	25,682	34,835
Other ferro-alloys [4]	6,507	9,127	6,893	8,290
Aluminum ingots and shot	734	1,314	768	996
Copper ingots, cakes, shot, etc	261	392	286	194
Nickel ingots, cathodes, shot, etc	410	236	191	364

[1] From Dominion Bureau of Statistics data.

[2] Most important materials only.

[3] Spiegeleisen, silicospiegeleisen, ferromangenese (all grades) and silicomanganese.

[4] Ferrosilicon (all grades), ferrochrome (all grades), ferromolybdenum, ferrophosphorus, ferroselenium, ferrotitanium, ferrotungsten, ferrovanadium, ferrozirconium, and all other ferro-alloys.

Pig Iron vs. Scrap:

In the open-hearth process, pig iron and scrap are generally used in equal proportions. Within certain limits they are interchangeable, the decision to use one or the other being influenced greatly by relative supply and price. More pig iron is used when scrap is a high cost material, e.g., the period late 1955-early 1956. Something more like the traditional 50-50 is charged when scrap is in easy supply and the price differential in its favour is operative.

Algoma is Canada's largest pig iron producer and as such is in a position of flexibility on the count of scrap replacement. As scrap prices rise, the company can increase its production of pig iron for open-hearth charge; during the recent period of tight scrap supply, the level rose as high as 70 p.c. pig iron and 30 p.c. scrap. The company has always charged a greater proportion of pig iron than of scrap.

Dosco is also in a position of charging a higher proportion of pig iron than scrap: between 60 and 70 p.c. pig iron, in recent years. This higher-than-average level of pig iron charge is a reflection of the scrap situation in the Maritime area.

Stelco has been successful in increasing steel-ingot production per unit of open-hearth capacity and the company has been finding itself in a position of tight pig iron supply in feeding its steel furnaces. During the past period of high-cost scrap, Stelco was not in a position to use pig iron as scrap replacement. In order to keep its open-hearth furnaces in full operation, the company was required to charge approximately equal quantities of pig iron and scrap.

Traditional practices in connection with pig iron and scrap are of little relevancy in connection with Dofasco's operations. The company's two oxygen steel-making furnaces represent new techniques in the production of steel and the process consumes approximately 75 p.c. pig iron and 25 p.c. scrap.

Costs of Materials—Carbon and Low Alloy Steel Production:

Average raw material costs per ton at Algoma's, Dofasco's, Dosco's and Stelco's steel furnaces have been as follows in recent years[1]

Material	1948	1953	1954	1955
	$	$	$	$
Pig Iron	—	—	—	—
Scrap Iron and Steel	25.46	32.10	23.87	31.56
Iron Ore, crude	9.13	17.66	15.42	13.78
Iron Ore, calcined	[2]	[3]	[3]	[3]
Coke (not for fuel)	7.78	[3]	[2]	[3]
Dolomite, crude	2.64	3.20	3.06	2.40
Dolomite, calcined	[3]	[3]	27.05	24.46
Fluorspar	34.34	39.85	36.59	29.80
Lime	9.32	13.26	13.83	12.26
Limestone	1.59	2.36	2.62	2.28

[1] From Dominion Bureau of Statistics data.
[2] One company only.
[3] Two companies only.

Pig Iron in Charge:

Pig iron for open-hearth charge is a captive material and average pricing cannot be established.

Dosco apparently has a definite problem in the materials with which it works, entailing high-cost flux per ton of ingot and lower productivity per unit of capacity. The slag flushing operation in Dosco's open-hearth technique is unique in Canadian practice.

Prior to 1951, Dofasco purchased its pig iron on the open market but as of that year began to improve its position. The company now has one blast furnace with a second under construction. Despite a decided improvement, the company is still in an adverse position in relation to most of the mills with which it competes.

Its raw materials for pig iron production are purchased from independent sources and, as well, the company is penalized by transportation distance in respect of both iron ore and coal. Its pig iron costs are still among the highest of the mills on or near the Great Lakes.

Stelco's costs of assembly are apparently somewhat higher than those of most United States mills, with about the same differential existing in the cost of producing a ton of pig iron. If anything, the differential is increased as a consequence of the age and capacity per unit of its blast furnaces.

Algoma's costs per ton of pig iron should be close to the United States average, as a consequence of assembly cost and composition of burden. Low-cost iron material is offset by higher-cost coke. Algoma has been a leader in the use of prepared burdens; its ore as mined requires beneficiation but the resultant product provides savings through the blast furnace.

On balance, it would appear that pig iron costs to the integrated Canadian steel producers are slightly higher than the costs of United States mills competing in the Canadian market. Pig iron charged to Canadian open hearths brings with it a cost disability—a competitive disadvantage that cannot be measured in terms of dollars and cents. The position of each company differs in keeping with raw material strength or weakness and costs of production.

Scrap in Charge:

Most United States mills find that in the long run the scrap they charge is divided into two classes of approximately equal quantities, i.e. home scrap and industrial scrap. Home scrap is waste material resulting from the production and processing of steel scrap that does not leave the mill. Industrial scrap or purchased scrap is that scrap generated from steel processed by secondary manufacturers. It, in turn, falls into two categories: prompt industrial scrap (composed of clippings, stampings, borings, and other like waste which flows back immediately to the basic steel mills) and obsolescent scrap, that which results from wear and tear.

Of total scrap charged to the steel furnaces of Algoma, Dofasco, Dosco, and Stelco somewhere around 60 p.c. has been home scrap and 40 p.c. purchased scrap. Higher home scrap availability points to a greater amount of wastage in steel production and processing—wastage that incorporates a high degree of labour content and has an adverse effect on the cost of producing finished steel products. The average United States yield of finished steel from the original ingot is about 75 p.c. by weight; the average Canadian yield is presumably somewhat less.

Canadian mills are required to buy a smaller proportion of their total scrap requirements on the open market. Stelco, the largest consumer of scrap in Canada, buys its open-market scrap on a formula centring around the Buffalo price less transportation to Hamilton. In arriving at the amount which it is willing to pay, the company sets a level that directly affects the greater part of southern Ontario and an area as far east as Montreal. A small proportion of its open-market scrap is obtained under contractual arrangement with large secondary manufacturers in the Central Canadian market. Such scrap is returned direct to the mill by the processor, price conforming closely to the open-market price but influenced by negotiation. Dofasco scrap price closely follows the Stelco price.

Dosco is also affected by Stelco price, but indirectly. It charges somewhere between 60-70 p.c. pig iron and around 20 p.c. home scrap, the balance of the charge being made up of scrap purchased at a price based on Montreal and Hamilton prices.

Algoma is in somewhat the same position as Dosco, with possibly a smaller proportion of its total charge being made up of scrap purchased on the open market. Such scrap comes from the immediate area and from Wisconsin and Michigan.

Comparisons between scrap costs to Canadian and United States mills have little meaning because of the apparent differences in proportions of home scrap and purchased scrap charged to their respective steel furnaces. Many of the companies differ in the value they place on the scrap produced in their own mills. With regard to purchased scrap, however, there is apparently a basis for comparison in the fact that most mills on or near the Great Lakes are affected by an international price. Difference in the cost of open-market scrap to such mills is mainly a matter of transportation.

Other Iron-Bearing Materials:

Iron-bearing materials sufficiently high in Fe content to serve as a supplement to pig iron and scrap charge have always been fed to open-hearth furnaces to a greater or lesser degree. The use of other than pig iron and scrap is dependent on the cost per unit of iron, the nature of impurities in the material and availability, and is related to productivity and quality control.

Lump iron ore and local plant sinter are the most important materials charged as a supplement. The greater part of the former is obtained from the Marquette and Vermilion ranges in the Lake Superior district, (averaging 60 p.c. Fe), but increasing quantities have been drawn from Brazil (averaging 67 p.c. Fe). These ores are premium ores. The former is sold on the Lake Erie price base with premium in keeping with additional iron units over 51·5 p.c. The price of Brazilian ore as quoted in the June 26 issue of the American Metal Market was 18-19 cents per unit of iron, Brazilian port, 68-69 p.c. Fe (one unit of iron is equivalent to 1 p.c. or each 22·4 lbs. of specified iron content).

It may be that in the near future pelletized iron ore will also be shipped direct to open-hearth furnaces. Concentration and pelletizing will raise iron content to somewhere between 64–68 p.c. Fe, and presumably will make the material an excellent feed.

By-product ore may serve the same purpose and Canadian mills have experimented with the production of International Nickel at Sudbury from the nickeliferous pyrrhotite which it obtains during operations. Noranda's by-product ore at Port Robinson is also proving to be suitable. The by-product metal produced by Quebec Titanium at Sorel is already being used as an open-hearth charge in Italy.

Fluxing Materials:

The fluxing materials used in the open-hearth process are similar to those used in the blast furnace, with the exception that fluorspar is added as a neutral material. Limestone, lime and dolomite come from sources already outlined in a previous section. Fluorspar comes from Mexico and Spain, with costs increasing in keeping with distance from the Atlantic coast. About six pounds of fluorspar are required per ton of open-hearth steel produced.

Additive Metals:

Ferro-manganese alloy and other additive metals are obtained for the most part from Canadian sources. The former is used to desulphurize, to deoxidize and to improve strength and toughness. Of the overall amount of manganese-containing material used for these purposes, almost half is contained in the iron ore going into the blast furnace, the balance being added at later stages in the production of steel.

Costs of Materials—High Alloy Steel Production:

All five of the applicants—Algoma, Atlas, Dofasco, Dosco, and Stelco—produce low alloy steels but only one of them, Atlas Steels, Welland, has a complete steel-making unit concerned mainly with the production of high alloy and stainless steel grades.

Most high alloy steels are produced in electric arc furnaces. An electric furnace may be described as a cylindrical steel shell lined with refractory material, with equipment for tilting the furnace and for control and adjustment of the height of the electrodes. Atlas has six electric furnaces with a combined annual capacity of 170,000 net tons of steel. The smallest was enlarged to six net tons of steel per heat in 1942; the 10 net ton furnace installed pre-1939 has the same capacity still; and the balance, installed during the war years, are two of 25 net tons (June, 1941), and, two of 45 net tons installed in April, 1942 as 30-ton furnaces but converted to the larger capacity in August, 1948.

Apart from design, the basic difference between the electric furnace and the basic open-hearth furnace is the nature of the charge. Electric furnaces work almost solely on a cold charge, with the addition of virgin metals to provide proper composition, while open-hearth furnaces work on a pig iron and scrap basis, the former usually charged as a hot metal.

Another difference is that the open hearth is heated by gas or other fuel, the flame from which passes over the top of the furnace charge or "burden", whereas the electric furnace is heated by electricity through the medium of electrodes. The electrodes are brought close to the top of the charge and first cause a small area of the burden directly under them to melt, the molten metal then dropping through the charge to form a pool of molten metal on the hearth. As a result, the charge also melts from the bottom up.

The furnaces of Atlas Steels work with scrap as the basic material from which they produce their steels. The production of steel from scrap starts with segregation of the scrap according to composition. From only one grade about 40 years ago, there are today nearly 50 separate types of various corrosion, heat and acid-resisting steels and the straight chrome grades. This multiplicity of grades creates a problem in proper segregation when scrap is returned to the mill.

Segregation is essential to obtain the greatest benefits in respect of alloy conservation and to assure a melt that is as close as possible to the desired composition. Each element contained in the scrap should be as near as possible, by weight, to the number of pounds of that element required to meet the lower range of the chemical specification in the heat to be produced. A charge may contain all or part of the specified element, but care should be taken to see that no scrap is included containing elements that are not part of the specification. Knowing the amount of the various elements contained in the combination of scrap selected for the heat, the total amount of virgin alloys necessary to complete the heat can be calculated.

Scrap may be either home scrap or purchased scrap. During the period to early 1950, when Atlas Steels produced only bar and rod products, its generation of home scrap was less than 30 p.c. of the weight of the ingots processed. In subsequent years as the company moved into the field of sheet and strip production with concomitant teething and production problems, wastage began to increase substantially, and during 1953-1954 was somewhere between 35 and 40 p.c. of the weight of the ingots processed. In this latter year, of course, there was an increase in scrap due to extremely close inspection in a period of depressed markets. In 1955 there was a marked reduction in the amount of home scrap generated.

Very few problems are encountered in the segregation of home scrap. Composition is known and proper stockpiling is simply a matter of handling and movement.

Segregation of open-market scrap presents an entirely different problem, however. The use of high alloy and stainless steels in Canada is a relatively new field and secondary manufacturers are, in general, not sufficiently sizable to provide Atlas with properly segregated prompt industrial scrap to any great extent. This condition differs from that facing most United States producers which, through the medium of contracts, receive comparatively large proportions of open-market scrap in the form of clean, directly-returned material.

Conditions in Canadian and United States markets differ from another viewpoint also. The use of purchased scrap involves testing and analysis. The methods include chemical analyses of selected samples, spectrographic analyses, and less costly and less accurate methods such as magnetic tests and the spark test. Canadian scrap yards do not specialize in the handling and preparation of high alloy scrap. In the United States, dealers supplying such scrap analyze each car-load in order to assure accurate segregation and to bar such undesirable impurities as copper, brass and monel. The preparation and segregation of alloy scrap is a highly technical problem and few, if any, of the Canadian yards have the proper training and facilities to segregate and classify the multitude of alloy steels. As well, of course, high alloy scrap is usually bulky, requiring considerable space for handling, thus running up a dealer's costs.

As a consequence of these factors, the problem of proper segregation devolves almost solely on Atlas Steels. The company has full laboratory facilities where quantitative chemical analyses and qualitative tests are employed to determine the classification of these special steels. Spectrographic equipment was installed in 1953. The company buys its open-market scrap on an "out-turn" basis, the price being established subsequent to analysis and testing in the company's plant. The costs of such operations apparently place the company in a higher-cost raw material position than the United States firms with which it competes.

Costs are also higher as a consequence of scrap availability. The size of the scrap or its bulk density is of importance. Should there be too much light scrap in the charge for a given heat, the total volume of scrap required would exceed the free space of the furnace and part of the scrap could not be charged until a portion of the charge had been melted down. A charge made up entirely of heavy scrap would also be objectionable because there would not be the same shielding of the roof and walls during the melting period, resulting in a decrease in refractory life. Efficient operation requires that scrap for a given charge be not only satisfactory for that charge, but that it also be selected on the basis of scrap availability over a period of time.

Atlas Steels is apparently faced with a more difficult problem in such connection than most United States mills. High alloy steels are not used to the same extent in the Canadian market and the availability of open-market scrap is proportionately smaller than the United States supply. Problems of mix (composition and cubic measurement) involve the company in what would appear to be a greater use of high-cost virgin metal than the United States mills with which it competes.

Summation re Materials:

On balance, Canadian costs of raw materials for the production of steel are considered to be slightly higher than costs in the United States. There are many factors to be taken into account and the effect that some of them have is beclouded by differing accounting practices. As a consequence no attempt has been made to arrive at an estimate of *average* Canadian cost.

FINANCIAL STATE OF THE INDUSTRY

The draft proposals for increases in customs duties on basic Iron and Steel—presented to the Minister of Finance in July of 1954—probably were formulated in 1953. Beyond doubt, as argued before the Tariff Board in 1955-56, they reflected the experiences of 1954, which had been, from the point of view of the Industry, a less favourable year.

The annual financial statements of the applicant companies have been and are available to the public. While these do not necessarily show exactly what would be shown by a single consolidated statement for the Industry as a whole, they do reveal what is public knowledge: the five companies are operating, at close to capacity, in a seller's market, and are making substantial profits. No claim to the contrary is or can be made by any one of the five basic producers.

The Board was not directed by the Minister of Finance to conduct an investigation into the profitability or otherwise, long-term or short-term, of steel-making in Canada. It was directed, explicitly, to conduct a public inquiry, with a view to formulating "a revised schedule of tariff items, with recommendations as to rates of duty..." This responsibility the Board has attempted to discharge to the best of its ability, and the results of its investigation—which necessarily covered many facets of the Industry's situation related directly or indirectly to profits or losses—are embodied in the revised Schedule presented with this Report. In formulating that Schedule, the Board has proceeded on the assumption that a tariff schedule is not something which, under normal conditions, is to be rewritten from year to year but which must, by and large, serve in "good" years and in "bad". It has therefore endeavoured to keep before it at all times matters of broader import, nationally and internationally, than the balance sheet of one or another of the domestic steel producers.

For the benefit of readers of this Report, financial statements of the five applicant companies, consolidated for a period of years, will be found in Appendix I.

PART III

THE INQUIRY—AND ITS RESULTS

Relative to other metals—and, indeed, to most other products of industry—steel in its primary forms is cheap. Despite capital investment on a gigantic scale; despite that labor is a substantial element of cost; despite dependence in many instances and in many countries upon imported raw materials: despite all these factors, steel is, world-wide, a relatively cheap commodity.

Canada offers no exception to this general picture. That this should be so is not necessarily what one might expect, having in mind the geography of the country, the so-called "smallness" of the domestic market, the problems of transportation, and, above all, the degree to which in the past most of the domestic mills have had to depend upon imported ore and coal. And in the future? It has been predicted that, some day, steel will be produced without either coke-ovens or blast furnaces. But that day is as yet remote; meantime, only by virtue of continuing capital investment can the Canadian industry hope to maintain its competitive position among world producers.

And from what diverse situations do its members ponder further capital investment on the grand scale one is wont to associate with steel-making: Dosco, with its own iron ore and coal; Dofasco with neither. Algoma, near enough to ore, but rather remote from coal. Stelco, almost completely integrated, producing something of everything; Dosco, with relatively few lines. Dosco, alone on the eastern seaboard; Stelco, Dofasco and Atlas, within a stone's throw of one another in southern Ontario; Algoma, neither central nor yet western. Some, open to water-borne competition from abroad; others, relatively insulated from that, but at freight disadvantage vis-a-vis mills in the United States. Competing as they are—some with United States mills; others, with European; and all, one with another—it is small wonder that, in a growing market which is little more than one hundred miles deep but three thousand miles wide, Canadian steel mills have come to regard two factors as of prime concern to them: the cost of transporting their products to their customers *and* the incidence of the customs tariff. These factors will apply in the future, as they have in the past.

To the extent that price to the consumer is a criterion that all mills must apply to their operations, the customs tariff in Canada undoubtedly has been a potent factor affecting the price-pattern of domestic steel. The tariff has for many years been such as to guarantee not merely effective but keen competition for the domestic industry. The rates of duty on primary forms of steel have—even on paper—been, on the whole, moderate in relation to those applying to many other Canadian-produced goods. Moreover, in the case of primary steels, there has long prevailed the situation that the operative or effective rates on basic steels have been, not those which a hasty glance at the tariff schedules might imply but, rather, considerably lower rates, arising out of literally scores of so-called "end-use" or "purpose" items, applicable to various consumer interests or industries. Steel for farm implements and machinery; steel for the construction and maintenance of ships; steel as an article entering into the cost of production of fertilizers, sugar, and binder-twine; steel for many of the growing demands of the automotive industry; steel for scores of other and no less important uses:—all free of duty or at rates that could be described as no more than nominal. This proliferation of special-purpose or end-use items—the

growth of years, and perhaps the reflection of the development of "branch plant" industries in Canada—is an outstanding feature of the Canadian tariff; it is the factor which has resulted in the dilution of the apparent protection afforded to primary steel and which has made inevitable the keenness of competition which the Canadian steel producers have had to face and which, by and large, they have faced with almost surprising success.

The explanation is not, of course, that the Canadian steel industry is more efficient than its competitors in the United Kingdom, the United States, Belgium or West Germany. It has, beyond doubt, striven hard to be *as* efficient in producing those forms of primary steel for which it believed there was a substantial home-market. It has, over the years, ploughed back profits into newer or better facilities; it has been keenly alert as regards technological developments in open-hearth and rolling-mill techniques; it has, in one or two instances, pioneered on this continent in new methods of steel production; it has taken full advantage of governmental assistance open to it in the form of subsidies, subventions or drawbacks—both in peace and war; it has shown initiative and skill in negotiating more favorable rates on the transportation of its products to various areas of Canada; more lately, it has devoted finances to the opening-up of domestic supplies of iron ore, either for sale abroad or for its own furnaces; and, lastly but by no means least, it has made, with rare exceptions, what cannot be regarded as other than substantial profits.

What, then, has enabled the domestic steel industry to do so many things so successfully? *The public inquiry by the Tariff Board has revealed that, more than tariffs, freight charges upon imported steel have been a beneficent agent in capturing and retaining for the Canadian industry so great a portion of its own domestic market.* In the case of not a few important lines of basic steel, the industry today practically disregards the tariff and relies upon the incidence of freight charges to offset such higher production costs as it may experience. Naturally, this umbrella of freight protection affords more comforting shelter in some areas than in others. It affords the greatest degree of protection to those mills which are located closest to the great steel-consuming zone represented by the provinces of Ontario and Quebec (which, together, consume more of most forms of steel than do all other provinces together). Contrariwise, in some areas of Canada, the domestic producer—regardless of his location—is at a distinct disadvantage, freight-wise, vis-a-vis his foreign competitor. Centred, with one exception, in Ontario and Quebec, Canadian mills have shared a variety of regional advantages or disadvantages, both as between or among themselves and as against their non-Canadian competitors: in some instances, an advantage or a disadvantage as regards the laid-down cost of ore; in others, a disadvantage or an advantage in respect of coal; again, to some an advantage, to others a disadvantage, as regards proximity to the major consuming areas. These vital factors, varying in their impact, constitute a criss-cross pattern of manufacturing complexity with which the individual producers have learned to live, and, to fit into which, each has had to make his individual adjustment.

In its representations to the Minister of Finance, and in its public presentation of its case to the Tariff Board, the basic steel industry took the position that the existing tariff schedule is needlessly detailed and complex. The Board has found merit in this contention, and the new schedule which it now recommends contains only about one-third the number of separate tariff classifications at present in the statutes.

Secondly, the industry argued that in many respects the terminology of the tariff had become, in the light of modern technological practice, either obsolete or incorrect. The Board, with the expert advice of the basic industry *and* its customers, has attempted in its proposed schedule to bring the wording of the classifications more into line with modern techniques and with the "language of the trade".

More vital from the viewpoint of both the industry and the users of steel, the former vigorously argued that many of the so-called "end-use" or "purpose" items had out-lived their day and were no longer necessary. Some had, indeed, become quite obsolete. In certain instances, it was contended, the beneficiary of the concession extended by a special tariff item—some secondary industry—had "grown up", enjoyed now its own share of the overall protective element of the tariff, and no longer required special consideration as regards the duty on the steel which formed its raw material. A study of the proposed new schedule below will reveal that the Board, impressed by the case presented, has recommended that many of these special purpose items no longer be continued in the tariff.

In short, *as regards the matters referred to in the three immediately-preceding paragraphs*: Finding it necessary—in order to ensure adequate discussion in public—to enlarge its Terms of Reference, the Board selected for inquiry a total of 113 existing tariff classifications. Of this total, 21 have been set aside as being either not in need of revision or not strictly germane to an investigation relative to *basic* iron and steel. No recommendations as to changes in either wording or rates of these items are being put forward; *for the purposes of this Report*, they are merely listed herewith by existing item-number: items 385a ex, 386(g)ex, 386(h)ex, 387b, 388d, 392, 392b, 392e, 394(a), 394(b), 394(c), ex 410l, 440f, 441c, 442, 442b, 442c, 458, 848(4), 1028 and 1058. The remaining 92 (existing) items have been reduced in number to 38, inclusive of Drawback items. These 38 items, therefore, comprise the proposed Schedule embodied in this Report. With four exceptions (items 355b, 1005, 1009 and 1023) these have *not* been allotted final item-numbers, it not being known whether or not the Minister of Finance will wish to retain the existing statutory numbering.

The comments above relate to the problems inherent in the *wording and arrangement* of a new tariff on Iron or Steel in its basic forms. There remains the matter of *rates of duty*. The problems confronting the Board in this aspect of its inquiry, the decisions it reached, and the recommendations embodied in its proposed new Schedule, will now be commented upon (again, in general terms, since each proposed rate for each proposed item must be studied by the reader for himself, with reference to the notes provided later herein regarding each existing and each proposed tariff item).

Because of the great detail with which the existing tariff deals with basic steel products, it would be of advantage to the general reader, in studying the Board's recommendations, to think chiefly in terms of *four* steel products of the widest generic coverage and the greatest commercial importance, viz: plate, structurals, bars, and sheet and strip. For the purpose of general comment in this chapter, these four main groupings will suffice; persons desiring more detailed or more technical information will in any event refer to the proposed tariff schedule below and the extensive notes appended thereto.

After months of inquiry, and after hearing a vast amount of evidence—most of it from expert witnesses—*the Board has come to the conclusion that there is not much, if any, reason why any of these four generic classifications of steel should bear rates of duty different from the others.* That is to say: whether the original ingot or billet be rolled into a plate, or into a beam, or into a bar, or into a sheet, is not—from a tariff-making point of view—of significance. (From that point on, in the processing, differences do arise and distinctions may properly be made.)

A basic feature of the proposed schedule below is, therefore, that under each of the three columns of the tariff (British Preferential, Most Favored Nation and General), identical rates of duty are recommended for the main tariff item in each of the above-named four product-categories. These rates—5 p.c., 10 p.c., 20 p.c., respectively,—are not significantly above nor significantly below the average duty-burden borne by the classes of product to which in the past they have applied. They are *different*, however, in an important sense: with very

few exceptions, they will apply to all users of the same steel; they will, if adopted by Parliament, be the effective, rather than the nominal or paper rates. In that respect, the new classifications reflect an earnest effort by the Board to reduce—and, so far as possible, to remove—the scores of special concessions to certain classes of users which have served for years to dilute the apparent protection shown in the tariff; they reflect, also, an equally earnest effort to reduce existing rates wherever possible, to increase existing rates wherever warranted, and in the doing to achieve a balancing of result that should mean serious injury to none and greater fairness of treatment to all.

In preparing its Schedule, the Tariff Board has kept before it the obligations assumed by Canada under the General Agreement on Tariffs and Trade—and in particular (1) the commitments respecting those rates of duty which were and are bound against increase and (2) the commitments respecting margins of preference. While the Board has taken cognizance of these obligations, not only in general but as regards each individual tariff item under review, it has decided *not* to include in this Report its interpretation, in a legal sense, of the relative Articles of the General Agreement on Tariffs and Trade—first, because of the fact that in framing an entirely new tariff schedule it could not at all times be completely bound by the letter of the provisions; but secondly (and even more importantly) because it deems the matter of precise interpretation of the said provisions of GATT to be the function and the responsibility of other appropriate departments of Government.

PART IV

RECOMMENDATIONS BY THE TARIFF BOARD

REFERENCE No. 118: IRON AND STEEL

Having duly considered the evidence and information secured as a result of the Inquiry directed by the Minister of Finance; and

Having taken cognizance of the obligations assumed by Canada under various Trade Agreements, but without deeming itself circumscribed in detail thereby;

The Tariff Board has the honour to submit the following recommendations respecting the tariff treatment of basic forms of Iron or Steel:

I. That section 2(1) of the Customs Tariff being Chapter 60 of the Revised Statutes of Canada, 1952, be amended by deleting therefrom the following sub-sections: (c), (e), (i), (k), (m), and by inserting in lieu thereof in the said section 2(1) the following:

(*e*) "Steel" means any metal or combination of metals containing 50 percent or more, by weight, of iron;

(i) "Plate" when applied to iron or steel means a flat-rolled product of any shape, of the following dimensions: more than eight inches but not more than 48 inches in width and 0·2300 inch or more in thickness; more than 48 inches in width and 0·1800 inch or more in thickness;

(*m*) "Sheet" or "Strip" when applied to iron or steel means a flat-rolled product of any shape, of the following dimensions:

"Sheet": more than 12 inches but not more than 48 inches in width and 0·2299 inch or less in thickness; more than 48 inches in width and 0·1799 inch or less in thickness;

"Strip": more than eight inches but not more than 12 inches in width and 0·2299 inch or less in thickness; eight inches or less in width and 0·2030 inch or less in thickness;

II. That Schedule A to the Customs Tariff, being Chapter 60, Revised Statutes of Canada, 1952, be amended by deleting therefrom the following tariff items, descriptions and rates of duty appertaining thereto:

355b, 374, 376, 377, 377a, 377b, 377c, 377d, 377e, 377f, 378(a), 378(b), 378(c), 378(d), 379(a), 379(b), 379(c), 379(d), 379(e), 380(a), 380(b), 380(c), 380(d), 381(a), 381(b), 382(a), 382(b), 382(c), 382(d), 383(a), 383(b), 383(c), 383(d), 383(e), 383(f), 383(g), 384, 384a, 385, 385a, 385b, 385c, 386(a), 386(b), 386(c), 386(d), 386(e), 386(f), 386(g), 386(h), 386(i), 386(j), 386(k), 386(l), 386(m)(i), 386(m)(ii), 386(n), 386(o), 386(p), 386(q), 386(r), 386(s), 386(t), 386(u), 386b, 386e, 387, 387a, 387c, 388, 388a, 388b, 388c, 388e, 388f, 388g, 389, 392a, 395, 395a, 438f, and by inserting the following items, descriptions and rates of duty in the said Schedule A:

	Goods Subject to Duty and Free Goods	British Preferential Tariff	Most-Favoured-Nation Tariff	General Tariff
1	(a) Pig iron....per ton	$1.50	$2.50	$5.00
	(b) Sponge iron....	Free	Free	Free
2	(a) Ingots of iron or steel, n.o.p....per ton	Free	$3.00	$5.00
	(b) Ingots of iron or steel, round, corrugated, weighing not less than 30,000 pounds....	Free	Free	5 p.c.
3	Iron or steel, semi-finished, viz.: blooms, slabs, billets or sheet bars:			
	(a) For pressing or rolling into bars....per ton	Free	$3.00	$5.00
	(b) For processing other than into bars....	Free	5 p.c.	10 p.c.
4	Shapes or sections of iron or steel, not further manufactured than hot- or cold-rolled:			
	(a) Angles, beams, channels, tees, zees, or other shapes or sections, n.o.p....	5 p.c.	10 p.c.	20 p.c.
	(b) Wide-flange beams more than 10 inches in depth....per ton	Free	$5.00	$20.00
	(c) Angles more than six inches in length of either leg; beams more than 18 inches in depth; channels more than 15 inches in depth; zees more than six inches in depth of any leg: all the foregoing when not made in Canada....	Free	Free	10 p.c.
	(d) Sash, casement or frame sections of iron or steel, hot- or cold-rolled, coated or not, not punched, drilled nor further manufactured, and similar material formed from hot- or cold-rolled iron or steel strip, coated or not, when imported by manufacturers of metal window sash, casements or frames for use in the manufacture of such articles, in their own factories....per ton	Free	$7.00	$7.00
5	(a) Bars or rods of iron or steel, hot-rolled, plain or deformed, viz.: rounds, half-rounds, ovals, half-ovals, squares, round-cornered squares, hexagons, octagons or other multi-sided bars or rods; flats, 13/64 inch or more in thickness and eight inches or less in width....	5 p.c.	10 p.c.	20 p.c.
	(b) Bars or rods of iron or steel, as described in sub-item (a) of this item, cold-rolled or cold-drawn	5 p.c.	15 p.c.	25 p.c.
	(c) Bars or rods of iron or steel, as described in sub-item (a) of this item, further processed than hot- or cold-rolled or cold-drawn, or otherwise processed....	5 p.c.	15 p.c.	25 p.c.
	(d) Rods of iron or steel, in the coil, not more than ·375 inch in diameter, when imported by manufacturers of wire for use exclusively in the manufacture of wire, in their own factories....per ton	Free	$3.00	$5.00
6	(a) Plates of iron or steel, not further manufactured than hot- or cold-rolled, and whether or not coated, coiled, or with rolled surface pattern....	5 p.c.	10 p.c.	20 p.c.
	(b) Plates of iron or steel, flanged or dished ....per ton	$5.00	$8.00	$15.00
	(c) Plates of iron or steel, n.o.p....	5 p.c.	15 p.c.	25 p.c.
7	Sheet or strip of iron or steel, corrugated or not, and whether or not with rolled surface pattern:			
	(a) Hot-rolled....	5 p.c.	10 p.c.	20 p.c.
	(b) Cold-rolled or cold-drawn....	5 p.c.	15 p.c.	25 p.c.
	(c) Coated with tin or vitreous enamel....	10 p.c.	15 p.c.	25 p.c.
	(d) Coated with zinc....	7½ p.c.	15 p.c.	25 p.c.
	(e) Coated, n.o.p....	Free	10 p.c.	20 p.c.
	(f) Hot- or cold-rolled, when imported by manufacturers of butts and hinges for use exclusively in the manufacture of butts and hinges, in their own factories....	Free	7½ p.c.	10 p.c.
	(g) Hot- or cold-rolled, not more than ·025 inch in thickness, containing not less than 2·90 per cent of silicon, coated or not, for use in the manufacture of electrical apparatus or parts therefor....	Free	Free	12½ p.c.

	Goods Subject to Duty and Free Goods	British Preferential Tariff	Most-Favoured-Nation Tariff	General Tariff
8	(a) Plate, sheet or strip of iron or steel, not tempered or ground, nor further manufactured than cut to shape, without indented edges, when imported for use exclusively in the manufacture of saws..................	Free	Free	10 p.c.
	(b) Plate, sheet or strip of iron or steel, hardened, tempered or ground, not further manufactured than cut to shape, without indented edges, when imported for use exclusively in the manufacture of saws..................	Free	7½ p.c.	15 p.c.
9	Sheet or strip of iron or steel, coated with lead or with an alloy of lead and tin..........................	Free	Free	15 p.c.
10	Strip of iron or steel, hot- or cold-rolled, less than four inches in width, with rolled or milled edges, coated or not..................................	Free	Free	15 p.c.
11	Plates, sheet or strip of iron or steel, hot- or cold-rolled, when imported by manufacturers of pipes or tubes, for use exclusively in the manufacture of pipes or tubes...	Free	10 p.c.	15 p.c.
12	Plate or sheet of iron or steel, rolled from ingots, blooms or slabs of Canadian origin, when imported by the manufacturer of the said ingots, blooms or slabs..	Free	Free	20 p.c.
13	(a) Railway rails of iron or steel, of any weight, or for any purpose, punched, drilled, or not............	5 p.c.	10 p.c.	20 p.c.
	(b) Fish plates, splice bars, rail joints, tie plates, of iron or steel..............................per ton	$5.00	$7.00	$8.00
	(c) Rails (track) of iron or steel, other than railway rails, further manufactured than hot-rolled, with other sections, arched or not, welded thereto or not..	Free	12½ p.c.	35 p.c.
14	Forgings of iron or steel, hollow, rough-machined or not, not less than 12 inches in internal diameter; all other forgings, solid or otherwise, rough-turned or rough-machined or not, of a weight of 20 tons or more..	5 p.c.	20 p.c.	30 p.c.
	Provided: That shapes or sections, bars or rods, plate, sheet or strip, of iron or steel, when described in items 4, 5, 6, 7, 10 or 11 of the above schedule as "hot-rolled" or "cold-rolled", shall be so classifiable whether or not in condition as imported such shapes or sections, bars or rods, plate, sheet or strip have been subjected to such further processing as annealing, tempering, pickling, liming or polishing.			
355b	Metal alloy strip or tubing—not being such strip or tubing as accords with the Definition of "Steel", in Section 2(e) of the Customs Tariff—containing not less than thirty per cent by weight of nickel and twelve per cent by weight of chromium, for use in Canadian manufactures.......................	Free	Free	20 p.c.

III. That Schedule B to the said Customs Tariff be amended by deleting therefrom the following drawback items, descriptions and amounts of customs duty subject to drawback thereunder: 1005, 1006, 1007, 1009, 1015, 1023, 1025, 1027, 1045, 1045a, 1057, and by inserting the following drawback items, descriptions and amounts of customs duty subject to drawback thereunder in the said Schedule B:

Item No.	Goods	When Subject to Drawback	Portion of Duty (not including Special Duty or Dumping Duty) Payable as Drawback
1005	Steel........................	When used in the manufacture of cutlery..........................	99 p.c.
1009	Steel........................	When used in the manufacture of files	60 p.c.
1023	Hot-rolled hexagon bars of iron or steel	When used in the manufacture of cold-rolled or cold-drawn bars of iron or steel......................	60 p.c.

H. B. McKINNON

Chairman

F. J. LEDUC

Vice-Chairman

W. W. BUCHANAN

Member

INFORMATION REGARDING RECOMMENDED AND EXISTING DEFINITIONS AND TARIFF ITEMS

It was inevitable that, in the discussions during public sittings of the *proposals* put forward by the five basic producers for revisions of the relevant items of the Customs Tariff, the related *existing* tariff items should serve as a "peg" whereon to hang the presentations of views, pro and con. Only for such existing items were statistical data available; only for these, also, was there an administrative "record of performance", reflecting the interpretation that had attached to various words and phrases during the past many years. All persons present were familiar with the items that had prevailed; many, on the other hand, were quite uncertain as to exactly what was meant by new wordings, new definitions, and new groupings, as suggested by the basic producers. There was the further advantage that the use of existing items as the basis of discussion permitted advice and comment of officers of the Department of National Revenue (Customs and Excise), who were able to explain in person how these items had in the past been dealt with by them and their associates—a feature of the public sittings which was of the greatest value and for which the Board and its staff are grateful.

On the pages which comprise the remainder of this Part (Part IV) of the Report, will be found explanatory notes regarding:

(1) Each revised *Definition*, as now recommended by the Tariff Board;

(2) Each *tariff item*, as now recommended by the Tariff Board; and

(3) Immediately following the notes on the *recommended* Definitions and tariff items, corresponding notes regarding each *existing* Definition or tariff item covered by the Board's Terms of Reference.

Notes on *recommended* Definitions and tariff items necessarily are non-historical in character. They seek to set forth (1) what revision in wording (if any) is suggested, and why; (2) what rates of duty or duty-drawback are recommended, and why.

The notes regarding *existing* Definitions and tariff items are explanatory of their scope and functioning in the past, together with information thereupon gleaned during the Board's inquiry.

EXPLANATORY NOTES

REGARDING

DEFINITIONS,

TARIFF ITEMS

AND

DRAWBACK ITEMS

AS RECOMMENDED BY THE TARIFF BOARD

Reference No. 118

73371—8

RECOMMENDED TARIFF DEFINITIONS

(INTERPRETATION)

2. (1) In this Act, and in any other Act relating to the Customs,

(*e*) "Steel" means any metal or combination of metals containing 50 per cent or more, by weight, of iron;

(*i*) "Plate" when applied to iron or steel means a flat-rolled product of any shape, of the following dimensions: more than eight inches but not more than 48 inches in width and 0·2300 inch or more in thickness; more than 48 inches in width and 0·1800 inch or more in thickness;

(*m*) "Sheet" or "Strip" when applied to iron or steel means a flat-rolled product of any shape, of the following dimensions: "Sheet": more than 12 inches but not more than 48 inches in width and 0·2299 inch or less in thickness; more than 48 inches in width and 0·1799 inch or less in thickness; "Strip": more than eight inches but not more than 12 inches in width and 0·2299 inch or less in thickness; eight inches or less in width and 0·2030 inch or less in thickness;

The proposed new Definition (*e*), "Steel", replaces the existing Definition (*e*), "Iron". The reason for this is that the proposed schedule of tariff items is so written that, where a product that is of iron (and not of steel) is referred to, it is described in specific terms (e.g.—"cast iron"; "sponge iron"). The proposed Definition (*e*), "Steel", was approved by those attending the public hearings as being in accord with trade usage.

The proposed revised Definitions (*i*), "Plate", and (*m*), "Sheet or Strip", which are dimensional in terms, have been adopted as being the consensus of makers and users of steel, as expressed at the public hearings. It will be noted that, under the wording of proposed Definition (*m*), "Sheet or Strip", the former terms "hoop" and "band" formerly (*c*), have been deleted, as being no longer of significance in the language of the trade.

RECOMMENDED TARIFF ITEMS

RECOMMENDED ITEM No. 1: PIG IRON AND SPONGE IRON

1(a): Pig iron			
per ton	$1.50	$2.50	$5.00

It is recommended that the wording and rates of existing item 374 remain virtually unchanged. The only proposed modifications consist of dropping the "n.o.p." provision and of increasing the General tariff, to create a differential from the M.F.N. rate. It is felt that no useful purpose would be served by proposing further modifications, since imports have traditionally been negligible whereas Canada is a substantial exporter of pig iron. See note on existing item

(b): Sponge iron	Free	Free	Free

It is recommended that no changes be made in either the wording or rates of duty applying to this item. Imports are insignificant. See note on existing item.

RECOMMENDED ITEM No. 2: INGOTS

It is recommended that one new item, with two sub-items, replace the four sub-divisions of existing item 377. The proposed item, in addition to reducing the number of sub-divisions, has a much simplified wording. Recommended item No. 2 makes provision for: (a) ingots, n.o.p., and (b) ingots weighing 30,000 pounds or more. The proposed item is as follows:

2(a): Ingots of iron or steel, n.o.p.			
per ton	Free	$3.00	$5.00

This sub-item would replace all of existing item 377 and parts of existing items 377a, 377b and 377c. Ingots can normally be utilized only by a basic steel producer or a forge shop. Since the five large basic steel producers make their own ingots, plus much of the relatively small tonnages required for forging operations, imports are usually restricted to sizes not made in Canada or to ingots for special purposes. In view of the limited volume of such imports, it is felt that there is no justification for increasing the existing M.F.N. rate. The General rate is revised in order to differentiate it from the M.F.N. rate.

(b): Ingots of iron or steel, round, corrugated, weighing not less than 30,000 pounds	Free	Free	5 p.c.

This recommended sub-item is included to permit the free entry of ingots in sizes not produced for sale in Canada. Its inclusion was requested by certain Canadian producers of forgings; the basic steel producers did not vigorously oppose the proposal to create such an item.

RECOMMENDED ITEM No. 3: SEMI-FINISHED STEEL

3: Iron or steel, semi-finished, viz.: blooms, slabs, billets or sheet bars:

(a): For pressing or rolling into bars			
per ton	Free	$3.00	$5.00
(b): For processing other than into bars	Free	5 p.c.	10 p.c.

This proposed item is intended to cover those rolled forms of steel, as named, which are recognizably in semi-finished form; that is, they require further processing before they become a finished product of the basic steel industry.

Sub-item (a), above, is a continuance in substance of existing item 377b (Free—Free—5 p.c.) under which certain "manufacturers of steel"—notably one of the Canadian producers of specialty steels—have been importing ingots or billets, for further processing (chiefly into bars). It is recommended that this item be continued, but that the rates be amended to read: Free—$3.00—$5.00 per ton.

Sub-item (b) will cover certain forms (chiefly billets) which have in the past entered under such items as 377a, 377c, 377d, 377e, 378(a), 378(b), 378(c) and 378(d). The B.P. rate is Free under several of these existing items; and existing M.F.N. rates have ranged from $3.00 per ton (about 4 p.c.) to $4.00 (about 5 p.c.) on the larger billets but have been as high as 12½ p.c. on bar-sized billets under item 378(d). The recommended rate of 5 p.c., M.F.N., is deemed to be sufficient for such semi-finished forms.

RECOMMENDED ITEM No. 4: SHAPES OR SECTIONS

It is recommended that shapes and sections be dealt with under one item, sub-divided into four parts covering (1) sizes and shapes made in Canada, (2) wide-flange beams, (3) sizes and shapes not made in Canada, and (4) an end-use item for metal window sash. The details of the item are as follows:

4: Shapes or sections of iron or steel, not further manufactured than hot- or cold-rolled:

(a): Angles, beams, channels, tees, zees, or other shapes or sections, n.o.p.

	5 p.c.	10 p.c.	20 p.c.

This sub-item is intended to deal with basic shapes or sections in sizes and shapes which are made in Canada. It is envisaged that a substantial proportion of the imports under existing items 388, 388a, 388b, 388c, 388e and 395 would enter under this item. The existing rates of duty for these basic forms range from Free to 5 p.c. under the B.P. tariff and from $3.00 per ton (2·5 p.c. ad ad valorem) to 12½ p.c. under the M.F.N. The great bulk of imports enters, however, under item 388 (at rates of Free B.P. and $3.00 per ton M.F.N.) or under item 388b (at $4.00 B.P. and $7.00 M.F.N.—the latter about 5·6 p.c. valorem). While these rates on the heavier sizes may have been reasonable when the Canadian basic steel industry was producing only the smaller sizes of shapes, there is thought to be no longer a valid case for maintaining them, since Algoma Steel Corporation has been producing large structurals for some time. Furthermore, this company is at a geographic disadvantage in relation to many of its major markets for structural steels and the application of the existing rates of duty has added to this disadvantage. There would seem to be no justification for retaining rates of duty on shapes and sections at levels which are considerably below those prevailing on other primary rolled forms of steel. It is recommended, therefore, that such products be dutiable at the same rates as have been recommended for plate, bars and sheet or strip.

(b): Wide-flange beams more than 10 inches in depth

per ton	Free	$5.00	$20.00

Wide-flange beams more than 10 inches in depth are not produced in Canada. More than 60 p.c. of total imports of shapes and sections consist of such wide-flange beams and because of the importance of these beams to industrial construction and the fact that all structural steels are frequently in short supply, it has been deemed advisable to recommend the rates proposed.

(c): Angles more than six inches in length of either leg; beams more than 18 inches in depth; channels more than 15 inches in depth; zees more than six inches in depth of any leg: all the foregoing when not made in Canada

	Free	Free	10 p.c.

Shapes and sizes of the dimensions specified in this sub-item are not at present made in Canada and there was general agreement at the hearing that they might be admitted duty free. Under the proposed wording of this sub-item, when any one of the named shapes is produced in Canada, such shape would be classified under some other appropriate item.

(d): Sash, casement or frame sections of iron or steel, hot- or cold-rolled, coated or not, not punched, drilled nor further manufactured, and similar material formed from hot- or cold-rolled iron or steel strip, coated or not, when imported by manufacturers of metal window sash, casements or frames for use in the manufacture of such articles, in their own factories

per ton	Free	\$7.00	\$7.00

It is recommended that this item be retained with its existing wording and rates of duty.

RECOMMENDED ITEM No. 5: BARS AND RODS

It is recommended that bars and rods be classified under one item having four sub-divisions, as follows:

5(a): Bars or rods of iron or steel, hot-rolled, plain or deformed, viz.: rounds, half-rounds, ovals, half-ovals, squares, round-cornered squares, hexagons, octagons or other multi-sided bars or rods; flats, 13/64 inch or more in thickness and eight inches or less in width

5 p.c.	10 p.c.	20 p.c.

This sub-item would replace the provisions for bars under existing items 377e, 377f, 378(a), 378(d), 379(a), 379(b), 379(c), 379(e). (An increasing pro-proportion of total imports of bars and rods now enters under item 378(c) at rates of 10 p.c. B.P. and 20 p.c. M.F.N.; or under item 378(d) at rates of Free B.P. and 12½ p.c. M.F.N.). The rates applicable to imports under the remaining existing bar items are usually Free B.P. and well under 10 p.c. M.F.N. The recommended M.F.N. rate has been set at a level between the higher of the rates generally applying and the lower rates of various end-use items. It is thought that a duty at this level should eliminate any necessity for the continuation of many end-use items, would have the advantage of placing the producer in a position to know the exact level of his protection, and would result in a more equitable application of the tariff since it would apply more equally to all, thus minimizing discrimination among users.

(b): Bars or rods of iron or steel, as described in sub-item (a) of this item, cold-rolled or cold-drawn

5 p.c.	15 p.c.	25 p.c.

This sub-item would provide for the bulk of bars and rods now classifiable under tariff item 378(c). It is included in the proposed schedule in order to provide a differential in rating between the hot-rolled and the cold-rolled or cold-drawn product. Trade statistics indicate that Canada is largely self-sufficient in the types of bars which would enter under this proposed item. The rates on existing item 378(c) are 10 p.c., 20 p.c. and 30 p.c.

(c): Bars or rods of iron or steel, as described in sub-item (a) of this item, further processed than hot- or cold-rolled or cold-drawn, or otherwise processed

5 p.c.	15 p.c.	25 p.c.

Sub-divisions (a) and (b) of this proposed item, being drawn in terms of hot-rolled or cold-processed products, sub-item (c) is intended to cover all other bars and rods, notably bars or rods which have been hammered or pressed (existing item 378(b) at 10 p.c., 20 p.c. and 30 p.c.) or which have been reeled,

turned, ground, etc. (existing item 378(c) at 10 p.c., 20 p.c. and 30 p.c.). Conceivably, it might in future include such bars or rods as may have entered formerly under tariff items 379(b), 379(c) or 379(e)—notes on which please see. The rates recommended provide, under the M.F.N. tariff only, a slight differential above those proposed for the cold-rolled product. The rates of duty on the two main items which would be deleted under this recommendation, namely 378(b) and (c), are 10 p.c. B.P. and 20 p.c. M.F.N. in the case of both items. On the other hand, the rates applicable to the two end-use items involved are Free under the B.P., and $2.75 and $3.50 M.F.N. (well under 5 p.c. ad valorem). Since the end-use items apparently are not being used extensively for the importation of bars or rods of the types described, it is felt reasonable that these items should be deleted and that all such imports should enter at uniform rates, which are lower than those at present in force for the main items. In this manner, compensation is provided for the removal of the end-use items, while at the same time the domestic steel producer is in a better position to know his effective protection.

(d): Rods of iron or steel, in the coil, not more than ·375 inch in diameter, when imported by manufacturers of wire for use exclusively in the manufacture of wire, in their own factories

per ton	Free	$3.00	$5.00

Provision is made for retention of this item in the proposed schedule because of the strong case presented for its retention by independent wire manufacturers. They pointed out at the public hearings that it has been increasingly difficult for them to obtain supplies of wire rods; furthermore, their domestic suppliers of rods (the basic steel producers) are also their competitors in the production of finished wire. Although the steel producers have made substantial tonnages of wire rods available to them, the other wire producers have not been able to obtain sufficient to meet their needs, and have had to import sizeable tonnages of rods from abroad. If this latter source of supply did not remain open to them, they feared that their operations would be curtailed. In the light of these circumstances, it is felt that, if existing item 379(d) were not continued, considerable injury might result to a number of wire and nail producers in Canada. It is therefore recommended that this item be continued and that the rates be as proposed.

RECOMMENDED ITEM No. 6: PLATES

It is recommended that one plate item, with three sub-items, should replace the numerous existing items dealing with imported plate. The bulk of imports entering under existing plate items will be classifiable under recommended item 6(a), to read as follows:

6(a): Plates of iron or steel, not further manufactured than hot- or cold-rolled, and whether or not coated, coiled, or with rolled surface pattern

5 p.c.	10 p.c.	20 p.c.

It is envisaged that this sub-item would cover most of the plate of the types now entering under existing items 380(a), (b), (c) if curved, and (d); 383(a), (b), (c), (d), (e), and (f); 385 and 385a; and 386(a).

The recommended item eliminates distinctions with respect to width of plate which have existed in the tariff for many years. When only the narrower widths were rolled in Canada, it had been felt desirable to provide for the entry of wider plate at reduced rates. Canadian steel producers now have facilities to roll plate to approximately 100 inches in width; and as the greater part of demand is for lesser widths, it is felt that no purpose would be served by simply altering the width limitations as set forth in existing items 380(a) and (b). There are suggestions that new plate mills are to be installed in the near future which will roll plate in even greater widths than 100 inches.

The proposed rates of duty strike a compromise among the various effective existing rates, which for the most part are Free under the B.P. tariff and which range from about 3·5 p.c. to 12½ p.c., M.F.N. Because of price increases of steel in recent years, a steadily increasing proportion of plate has been classified under item 385 (plate valued at not less than 5 cents per pound) at 12½ p.c. M.F.N. While certain existing M.F.N. rates for coated steel range as high as 17½ p.c., it is understood that relatively little plate is coated, and none by the basic steel producers.

One important end-use item (386(a)), which deals with plate, is eliminated. It is felt, however, that the recommended rates should not create problems for the beneficiaries of existing item 386(a), since the proposed rates are moderate and since most sizes of plate can be obtained from domestic suppliers in times of normal demand and supply.

(b): Plates of iron or steel, flanged or dished

per ton	$5.00	$8.00	$15.00

This recommended sub-item is intended to replace that portion of existing item 380(c) dealing with flanged or dished plate. These forms of steel are not produced in Canada by basic steel producers and normally must be imported by steel fabricators, particularly in the larger sizes, for incorporation into pressure vessels, etc. The recommended rates of duty would permit the importation of these important components for pressure vessels at rates considerably reduced from those at present in effect.

This sub-item is intended to serve as a so-called "basket item". It reads as follows:

(c): Plates of iron or steel, n.o.p.

5 p.c.	15 p.c.	25 p.c.

Plates not admissible under other items would be classified here, if recognizable as "plates".

RECOMMENDED ITEM No. 7: SHEET OR STRIP

It is recommended that one new tariff item replace the more than twenty-five existing items or sub-items which provide for the importation of sheet or strip. In this manner it is possible to eliminate the numerous obsolete and complex provisions in existing items which make meaningless distinctions based on thickness of metal, on values which have lost all their intended significance, and on purposeless divisions between sheet and strip, band or hoop. The one recommended item is sub-divided into seven parts, dealing with sheet or strip: (a) hot-rolled, (b) cold-rolled, (c) coated with tin or enamel, (d) coated with zinc, (e) coated, n.o.p., (f) for the manufacture of butts or hinges, and (g) silicon steel. The specific wordings are as follows:

7: Sheet or strip of iron or steel, corrugated or not, and whether or not with rolled surface pattern

(a): Hot-rolled

5 p.c.	10 p.c.	20 p.c.

This one sub-section would replace many of the provisions in existing items 381(a), 381(b), 382(a), 382(b), 383(g), 385, 385a, 386(c), (d), (e), (f), (i), (j), (k), (m)(ii), (n), (p), 386b, and 377e. The rates of duty applicable to this very considerable number of items vary greatly and range in toto from Free to 20 p.c. It is possible nevertheless, to make certain distinctions in the levels of existing rates: for example, the B.P. rates on the more important items range from Free to 5 or 7½ p.c., while the M.F.N. rates range from the equivalent of about 6 p.c. to 20 p.c. The rates applicable to the end-use items are usually appreciably lower, most of the B.P. rates being Free, with a number of the M.F.N. rates also being Free and only two being over 10 p.c. Imports under the existing main items are

many times greater than those under the end-use items. In considering new rates of duty, it was felt that if at all possible it would be desirable to arrive at one set of rates which would apply to practically all imports. Imports are decreasing in relation to Canadian production and there is no sound argument for increasing rates above their present overall levels. The rates recommended are therefore a compromise, being somewhat below those applying to the main items but above many of the end-use rates. The result is a tariff which does not substantially change the overall protection for the basic steel producers but is sufficiently moderate to justify a recommendation to delete most end-use items, thus spreading the duty more equitably among consumers.

(b): Cold-rolled or cold-drawn

5 p.c.	15 p.c.	25 p.c.

This sub-item would replace certain of the provisions of existing items 381(a), 381(b), 382(c), 382(d), 383(g), 385a, 386(b), (d), (e), (f), (i), (j), (k), (l), (m)(i), (o), (p), (u), and 377e. The greater part of present imports enters under item 381(a) at rates of 7½ p.c. B.P. and 20 p.c. M.F.N. An extensive list of end-use items (the 386 series) provides for importations at reduced rates for use in specific applications; such rates are without exception Free B.P. and generally 10 p.c. or less, M.F.N.

Imports of cold-rolled steel have diminished greatly in recent years, while domestic output has expanded. The rates proposed are thought to be a reasonable compromise between the existing rates on the main items and those applying to the many end-use items.

(c): Coated with tin or vitreous enamel

10 p.c.	15 p.c.	25 p.c.

This item would replace existing items 383(a), (b), (f) and, in part, 383(g). The M.F.N. rate on tinplate would remain at its present level while the B.P. rate would be reduced to 10 p.c. Imports have been very small. Since these coating operations are carried on in Canada, the first by the basic steel producers, it is felt that the existing rates, with moderate revision, are appropriate.

(d): Coated with zinc

7½ p.c.	15 p.c.	25 p.c.

This sub-item will cover such galvanized sheet or strip as has entered in the past under item 383(c) at 7½ p.c., 17½ p.c. and 20 p.c.; in part under item 383(g) at 10 p.c., 20 p.c. and 25 p.c.; and under two end-use items, viz.: 386(o), at Free, 7½ p.c. and 7½ p.c. and 386(s), at Free, 7½ p.c. and 20 p.c. The two latter have related specifically to electro-galvanized sheet or strip; under the proposed sub-item (d), above, no differentiation is made as regards the method by which the zinc has been applied.

(e): Coated, n.o.p.

Free	10 p.c.	20 p.c.

This recommended section is intended to deal with any coated sheet or strip except those which are tinplated, galvanized or coated with vitreous enamel. It would replace a number of provisions at present embodied in existing items 383(d), (e), (g), and 386(d), (f), (j). The recommended rates for this item are very similar to those proposed for uncoated sheet and strip. The reason for this relationship is that such coatings (as paint) as are applied in Canada do not advance the metal greatly beyond the rolling stage. On the other hand, many of the other more complicated coatings are not applied in Canada and the product must be imported. There are, therefore, sound reasons for not recommending rates greater than those applying to hot- or cold-rolled steel.

(f): Hot- or cold-rolled, when imported by manufacturers of butts and hinges for use exclusively in the manufacture of butts and hinges, in their own factories

Free	$7\frac{1}{2}$ p.c.	10 p.c.

This recommended item would replace existing items 386(b) and (u). In view of the difficulties being experienced by the beneficiaries of the existing items, it is felt that this classification should be retained at the rates shown. See note on existing items.

(g): Hot- or cold-rolled, not more than ·025 inch in thickness, containing not less than 2·90 per cent of silicon, coated or not, for use in the manufacture of electrical apparatus or parts therefor

Free	Free	$12\frac{1}{2}$ p.c.

This recommended item is identical with existing item 385c. Silicon sheets of the silicon content prescribed are produced in Canada, chiefly in the narrower widths of sheet, but for certain uses (e.g., electrical) such sheets frequently bear an insulating coating, said not to be available from domestic mills. Retention of the sub-item would appear to be warranted.

RECOMMENDED ITEM No. 8: SAW STEEL

8(a): Plate, sheet or strip of iron or steel, not tempered or ground, nor further manufactured than cut to shape, without indented edges, when imported for use exclusively in the manufacture of saws

Free	Free	10 p.c.

This recommended item is a continuance in substance of existing item 386(g); and in terms, of existing item ex-386(g). As explained in the note on existing item 386(g) (which see), the wording of the "ex" item has been adopted, for the reason that it is bound in the GATT Schedule.

The note on existing item 386(g) reviews the evidence presented during the inquiry, which summarized is: No saw steel is made in Canada, nor is any likely to be made in the foreseeable future. This applies to both the non-tempered and tempered product. No sound reason was advanced for deletion of this particular end-use item.

(b): Plate, sheet or strip of iron or steel, hardened, tempered or ground, not further manufactured than cut to shape, without indented edges, when imported for use exclusively in the manufacture of saws

Free	$7\frac{1}{2}$ p.c.	15 p.c.

This recommended item is a continuance in substance of existing item 386(h); and in terms, of existing item ex-386(h). As explained in the note on existing item 386(h), the wording of the "ex" item has been adopted, for the reason that it is bound in the GATT Schedule.

In respect of both recommended items 8(a) and (b), the reference to "hoop" and "band" has been dropped, in accordance with the terminology applied throughout the proposed Schedule.

No tempered, hardened or ground saw steel is made in Canada; nor is such steel likely to be made in the near future. No sound reason was advanced for deletion of this particular end-use item. See note on existing items 386(g) and (h).

RECOMMENDED ITEM No. 9: TERNE PLATE

9: Sheet or strip of iron or steel, coated with lead or with an alloy of lead and tin

Free Free 15 p.c.

This recommended item is a continuance of existing item 386e which has borne rates of Free, 5 p.c. and 15 p.c. The wording has been revised slightly to conform with that which had prevailed in Drawback Items 1045 and 1045a.

The note on existing item 386e states rather fully the situation in Canada from the standpoint of the basic steel industry, on the one hand, and the users of terne plate, on the other. Since there is no prospect of the product being made in Canada in the near future, there is no reason for discontinuing this provision in the tariff. Moreover, in the light of certain other changes in rates that are recommended, (particularly the cancellation of Drawback Items 1045 and 1045a) the Board has deemed it advisable to recommend that terne plate, in so far as concerns the M.F.N. tariff, be accorded the rate shown.

RECOMMENDED ITEM No. 10: ROLLED-EDGE STRIP

10: Strip of iron or steel, hot- or cold-rolled, less than four inches in width, with rolled or milled edges, coated or not

Free Free 15 p.c.

This is a proposed new item. The imports probably to be classified thereunder may have been entered in the past under some ten or more existing tariff items—i.e., almost all items in the schedules in which the word "strip" has appeared. Strip of this width with rolled or milled edges is not made in Canada. A good deal of what has been imported in the past has been for applications for which a raw-edge strip could not be used (e.g., for cooperage purposes: under existing items 384a and 386(q)); more and more, various industries are using strip under four inches, and more and more frequently the demand is for strip with a finished edge and, frequently, for a coated strip. The B.P. rates on strip, under existing items, vary from Free to $12\frac{1}{2}$ p.c.; the M.F.N. rates, from Free to $22\frac{1}{2}$ p.c. By reason of generally-increased (and increasing) prices of steel, much of the strip that will be covered by the recommended item has been becoming classifiable under item 385 at Free, $12\frac{1}{2}$ p.c. and 15 p.c. The new rating recommended is believed by the Board to be in the interest of Canadian industry in general.

RECOMMENDED ITEM No. 11: STEEL FOR PIPES

11: Plates, sheet or strip of iron or steel, hot- or cold-rolled, when imported by manufacturers of pipes or tubes, for use exclusively in the manufacture of pipes or tubes

Free 10 p.c. 15 p.c.

This recommended item provides for the basic raw material (with the exception of billets) of the pipe and tube industry. Rates formerly applicable to steel for this use were:

Bessemer billets—Item 377d, at Free—5 p.c.—5 p.c.
Other billets for seamless pipes—Under various items, but with 99 p.c. drawback (hence, Free).
Skelp, so-called—Item 384, at Free—5 p.c.—5 p.c.
Cold-rolled strip—Item 386(r), at Free—5 p.c.—5 p.c.

The proposed item provides for an increase in duty (from 5 p.c. to 10 p.c.) under the M.F.N. Tariff on all flat-rolled steel for making pipes or tubes, whether hot-rolled or cold-rolled. So-called skelp is not substantially different from hot-rolled sheet or plate; and the Board sees no reason why pipe-material, flat-rolled, should bear a lower rate than is being recommended in respect of the comparable hot-rolled products, such as plate, sheet or strip. Such billets for pipes or tubes

as entered formerly under tariff item 377d (Free—5 p.c.—5 p.c.) or under Drawback Item 1028 (99 p.c.) will remain dutiable for the most part under recommended item No. 3(b) (Free—5 p.c.—10 p.c.).

RECOMMENDED ITEM No. 12: SPECIALTY STEEL

12: Plate or sheet of iron or steel, rolled from ingots, blooms or slabs of Canadian origin, when imported by the manufacturer of the said ingots, blooms or slabs

Free	Free	20 p.c.

This is a continuance in substance of existing item 385b, the note on which gives such information as was available at the time of the Board's inquiry. As that note explains, item 385b was created by Order in Council in 1955; it permitted the Canadian producer of specialty steel, notably so-called stainless steel, to export his ingots, etc., to have these rolled into sheet or plate of widths greater than possible with his own facilities, and to import the processed forms resulting therefrom (chiefly, plate and wide sheet).

It will be seen that, in re-wording the item, the phrase "of a class or kind not made in Canada" has been deleted; and that changes in the rates of duty have been recommended.

RECOMMENDED ITEM No. 13: STEEL RAILS

13(a): Railway rails of iron or steel, of any weight, or for any purpose, punched, drilled, or not

5 p.c.	10 p.c.	20 p.c.

This item continues in effect, as regards wording, existing item 387, the note on which please see. It will in future cover such imports of grooved or girder rails (for electric tramway use) as have been classifiable in the past, at rates of Free, $7.00 and $7.00, under tariff item 387c, the deletion of which is now recommended. See note on existing item 387c.

In the opinion of the Board, the rolling of steel rails is not essentially different (if at all) from the rolling of such related primary steels as structurals, plate, etc. For that reason, there would seem to be no reason why the same rates of duty should not apply. Therefore, it is recommended that the specific duty heretofore applicable to item 387 be replaced by the ad valorem rates shown above.

(b): Fish plates, splice bars, rail joints, tie plates, of iron or steel

per ton	$5.00	$7.00	$8.00

This recommended item is a continuance of existing item 387a, unchanged as to rates of duty and amended in wording solely by the deletion of "railway ties" (of iron or steel). Steel ties appear to have been used very little, if at all, in Canadian railroad construction or maintenance. See the note on existing item 387a.

(c): Rails (track) of iron or steel, other than railway rails, further manufactured than hot-rolled, with other sections, arched or not, welded thereto or not

Free	$12\frac{1}{2}$ p.c.	35 p.c.

This recommended item is a continuance of existing item 388g, the note on which please see for information in detail. No changes in wording or in rates of duty are recommended.

RECOMMENDED ITEM No. 14: CERTAIN FORGINGS

14: Forgings of iron or steel, hollow, rough-machined or not, not less than 12 inches in internal diameter; all other forgings, solid or otherwise, rough-turned or rough-machined or not, of a weight of 20 tons or more

5 p.c. 20 p.c. 30 p.c.

This recommended item is, in essence, existing tariff item 392a, which bears rates of Free, 15 p.c. and 30 p.c. The words in the latter "in any degree of manufacture" have been deleted as being ambiguous in their context and somewhat difficult of administration.

The note on existing item 392a explains not only the operation of the existing item but outlines the arguments pro and con that were entered at the sittings by the domestic manufacturers who forge heavy ingots of their own pouring, and by the representative of the British Iron and Steel Federation. After full consideration of the information elicited at the inquiry, the Board recommends the change in rates indicated above.

RECOMMENDED ITEM No. 355b: METAL ALLOYS

355b: Metal alloy strip or tubing—not being such strip or tubing as accords with the Definition of "Steel", in Section 2(e) of the Customs Tariff—containing not less than thirty per cent by weight of nickel and twelve per cent by weight of chromium, for use in Canadian manufactures

Free Free 20 p.c.

The purpose of the amended wording is to ensure that such metal alloy strip or tubing as is essentially steel-alloy strip or tubing will hereafter be regarded as falling within the tariff item grouping intended to cover alloyed steel strip and alloyed steel tubing.

RECOMMENDED DRAWBACK ITEM No. 1005

1005: Steel, when used in the manufacture of cutlery. . . Drawback of 99 p.c.

Existing Drawback Item 1005 provides for drawback of duties of 99 p.c. on steel used in the manufacture of cutlery or stove trimmings. In the light of the situation outlined in the note on existing item 1005 (which see), the Board is recommending that such drawback in future be at the same rate (99 p.c.) but that the same apply only in respect of cutlery.

RECOMMENDED DRAWBACK ITEM No. 1009

1009: Steel, when used in the manufacture of files. . . Drawback of 60 p.c.

As a consequence of the information put on record at the public sittings, as reflected in the note on existing Drawback Item 1009, the Board recommends the continuance of a drawback of 60 p.c., restricted, however, to steel used in the manufacture of files.

RECOMMENDED DRAWBACK ITEM No. 1023

1023: Hot-rolled hexagon bars of iron or steel, when used in the manufacture of cold-rolled or cold-drawn bars of iron or steel. . . Drawback of 60 p.c.

As explained in the note on existing Drawback Items 1023 and 1025, Bessemer hexagons are not produced in Canada. The existing drawback of 99 p.c. on imports of Bessemer hexagons under item 1025 has become inoperative because of the fact that the price of such hexagons has risen beyond four cents per pound. At present, therefore, only Drawback Item 1023 is of any value to the cold-rolling and cold-drawing industry.

Under the Board's recommendations, the M.F.N. rate on cold-rolled bars will drop from 20 p.c. to $12\frac{1}{2}$ p.c.; and on cold-drawn bars, from 20 p.c. to $12\frac{1}{2}$ p.c. It is prepared to recommend continuance of Drawback Item 1023, at a rate of 60 p.c.

EXPLANATORY NOTES

REGARDING

DEFINITIONS,

TARIFF ITEMS

AND

DRAWBACK ITEMS

AS EXISTING AT DATE OF REPORT

Reference No. 118

EXISTING TARIFF DEFINITIONS

Interpretation

2. (1) In this Act, and in any other Act relating to the Customs,

(*c*) "hoop, band and strip" when applied to iron or steel mean flat forms not more than fourteen inches in width and less than 0·1875 inch in thickness;

(*e*) "iron" includes "steel";

(*i*) "plate" when applied to iron or steel means a rectangle, circle or sketch as cut in a plate mill, more than fourteen inches in width and 0·1875 inch or more in thickness, with variations from such thickness not exceeding 0·015 inch;

(*k*) "rolled iron" or "rolled steel" means iron or steel hot rolled only;

(*m*) "sheet" when applied to iron or steel means a rectangle more than fourteen inches in width and less than a plate in thickness.

Of the above five Definitions relating to iron or steel:

Those designated by the letters (c), (i) and (m) have been retained in revised form (see notes on proposed Definitions);

Those designated by the letters (e) and (k) have been recommended for deletion as being not in accord with the new Definitions or with the nomenclature of the proposed tariff schedule.

EXISTING TARIFF ITEMS

EXISTING TARIFF ITEM 355b: METAL ALLOYS

355b: Metal alloy strip or tubing, containing not less than thirty per cent by weight of nickel and twelve per cent by weight of chromium, for use in Canadian manufactures

Free	Free	20 p.c.

This item came under review (although not in the Terms of Reference) because alloys *essentially of steel* (and, hence, more properly classifiable with the Iron and Steel group) enter thereunder. The note on the proposed amended item is self-explanatory.

EXISTING TARIFF ITEM 374: PIG IRON

374: Pig iron, n.o.p.—(s.c. 5011 and 5012)

per ton	$1.50	$2.50	$2.50

This is the only item in the Tariff which refers specifically to pig iron. Pig iron may enter, of course, under various end-use items (notably item 442) but statistics as to imports are available only as regards items 374 and 442.

Item 374 was last revised in 1930, and then only as regards number and wording.

Production: Canada has for many years been virtually self-sufficient as regards pig iron for both steel-furnace and foundry uses. The production in 1954 amounted to more than 2,000,000 tons and in 1955 to 3,213,764 tons.

Imports: Historically, negligible. In 1954, about 20,000 tons and in 1955, 14,218 tons, the United States being chief supplier.

Exports: Fairly substantial, and entirely to the United States: 203,000 tons in 1954 and 255,592 tons in 1955. Algoma Steel was the exporter.

Ad valorem equivalent of duties paid on imports from the United States:
1954: dutiable (item 374)....3·4 p.c.
1955: dutiable (item 374)....3·5 p.c.

On small imports from other countries, notably the United Kingdom and Spain, the ad valorem incidence ranged in 1954 from 3 p.c. to 7 p.c.

No change was suggested by the applicant companies respecting the free entry of pig iron under such items as item 442.

U.S.A. Duty: 60 cents per ton.

Bound Rates: Neither the B.P. nor the M.F.N. rate is bound under GATT.

Alloy-surtax: Does not apply to existing items.

Cross-reference: Recommended Item No. 1(a).

Relative to the request of the basic producers for ad valorem rates of 5 p.c. 10 p.c. and 10 p.c., no objection was expressed at the Inquiry by users, *provided* that the ad valorems that might be substituted have no more incidence than that of the specific duties as of today.

EXISTING TARIFF ITEM 376: SPONGE IRON

376: Sponge iron—(s.c. 5024)

Free	Free	Free

This item was inserted in the Tariff in 1930, rated as at present.

Production: Not recorded, if any.

Imports: In 1954, 118 tons valued at $14,005, all from the United States.

Exports: Nil.

Sponge iron has not lived up to the promises of 1930 but there is reason to believe that it may yet become a factor of some importance to the steel industry.

Bound Rates: Bound Free to the United Kingdom (GATT note);
Bound Free to Sweden (Annecy).

Cross-reference: Recommended Item No. 1(b).

The basic producers withdrew their request for a change in this item.

EXISTING TARIFF ITEM 377: INGOTS, N.O.P.

377: Ingots, of iron or steel, n.o.p.—(s.c. portion of 5022)

per ton	$1.50	$3.00	$3.00

This item, at one time intended to be the main and substantive tariff item for ingots, was last revised in 1930, when it was rated as at present.

Production: Amounted in 1954 to 3,113,791 tons, practically all of which was retained, for further processing, in the basic mills where it was produced. In 1955, the corresponding figure for Canadian production was 4,441,743 tons.

Imports: Government statistics do not show the tonnage or value of imports under this item, per se. Statistical classification 5022 covers not only such ingots as were dutiable under tariff item 377, but also a range of somewhat similar basic forms (cogged ingots, blooms, etc.) imported under item 377c (q.v.) for making into forgings. As the rates on item 377c are quite different (Free, $3.00, $3.00) it is not possible to determine precisely either the value per ton of the *ingots, n.o.p.* or the ad valorem equivalent of the duties collected thereon. Under the joint-classification 5022, imports, entirely from the United States, were as follows:

	1954	1955
Tons	1,079	1,114
$	115,151	135,964

The average value of the grouped-imports was, in 1954, $106 per ton and in 1955, $122 per ton.

Exports: Not too much attention should be paid to the figures shown in Appendix B regarding exports of ingots from Canada. This country is not an exporter of ingots in any real sense—indeed, a considerable portion of such small exports as may be recorded in any year comprises Canadian-produced ingots which are exported (to the United States) and, after rolling, re-imported for further processing in the mills where they were poured.

Ad valorem equivalents: For what this figure is worth, since it covers two completely different yet inseparable groups of forms, the ad valorem equivalent of imports from the United States, under import classification 5022, was in 1954 about 2·8 p.c. and in 1955, 2·4 p.c.

U.S.A. Duties: On the group of basic forms similar to ingots, it would appear that the United States duty varies from about 8 p.c. to about 12½ p.c. (depending frequently upon the alloyed content, if any).

Bound Rates Item 377: No rates bound.
Item 377c: B.P. bound at Free (GATT note);
M.F.N. rate bound at $3.00 (at request of the United Kingdom).

Alloy-surtax: The existing alloy surtax applies to item 377, but not to item 377c.

Cross-reference: Recommended Item No. 2(a), (b).

EXISTING TARIFF ITEM 377a: BLOOMS, ETC.

377a: Blooms, cogged ingots, slabs, billets, n.o.p., sheet bars, of iron or steel, by whatever process made, n.o.p.—(s.c. 5020)

per ton	$2.50	$4.50	$4.50
GATT		4.00	

This item was intended to cover the general run of imports of the most primary forms *other than* the "ingots, n.o.p." covered by item 377.

Production: See note under existing item 377.

Imports: Under statistical classification 5020.

		1954	1955
ex U.S.A.	Tons	1,691	403
	$	172,288	43,750
ex U.K.	Tons	102	52
	$	38,439	15,181

The value, per ton, on imports in 1954 from United States was $102; from United Kingdom over $375.

Exports: See note under existing item 377.

Ad valorem equivalents:

	1954	1955
ex U.S.A.	3·9 p.c.	3·7 p.c.
ex U.K.	·7 p.c.	·9 p.c.

U.S.A. Duties: See note under existing item 377.

Bound Rates: B.P. bound at $2.50 (GATT note);
M.F.N. bound at $4.00 to U.S.A.

Alloy-surtax: The alloy-surtax under item 389 at present applies.

Cross-reference: Recommended Items Nos. 2(a), (b); 3.

EXISTING TARIFF ITEM 377b: INGOTS, ETC.

377b: Ingots, cogged ingots, blooms, slabs, billets, n.o.p., of iron or steel, valued at not less than three cents per pound, when imported by manufacturers of steel for use exclusively in the manufacture of steel, in their own factories, under regulations prescribed by the Minister—(s.c. 5021)

Free	Free	5 p.c.

This item was last revised in 1930, when it was rated as at present.

Production: No precise data available as regards ingots, etc., valued by the pound. See general production data under note on item 377.

Imports:

		1954	1955
ex U.S.A.	Tons	1,659	2,182
	$	405,000	657,177
ex Belgium	Tons	999	—
	$	60,629	—
ex U.K.		Negligible	—

Exports: See note on existing item 377.

The import data above reveal that the average value per ton of imports ex United States in 1954 was over $240 and in 1955, $300; ex Belgium, in 1954, about $60. Increases in recent years in steel generally have been such that, to

the extent that the importers (i.e., "manufacturers of steel") can qualify for recourse to this item, more and more of the total imports they require or seek to secure have become eligible for entry under this end-use classification. This is the item under which Vanadium Alloys Steel, Canada, imports its specialty—steel ingots or billets, for conversion in Canada into poundage-bars, dutiable at present under the M.F.N. Tariff at 12½ p.c.

Alloy-surtax: Does not at present apply to item 377b.

Bound Rates: No rates bound.

Cross-reference: Recommended Items Nos. 2(a), (b); 3.

At the public hearing, the validity of the "not less than 3 cents per pound" qualification was questioned, in view of present day values. Almost all steel, including carbon steel of all grades and qualities, is today worth more than three cents per pound. Hence, it was claimed by the basic producers (of both carbon and specialty steels) that an item which, when created, had been intended to cover expensive so-called "poundage steels" (very little, if any, of which were being produced in Canada in 1930, at last revision) was now—solely by reason of increases in values—applying to the imports of more and more ranges, kinds and types of steel, thus removing from the domestic producer any tariff protection on much of the steel he does and can produce. In this connection, it must be borne in mind that probably not more than ten or twelve firms in Canada would be recognized by the Customs authorities as being "manufacturers of steel".

EXISTING TARIFF ITEM 377c: FORGING INGOTS

377c: Ingots, cogged ingots, blooms, slabs, billets, n.o.p., of iron or steel, of a class or kind not made in Canada, when imported by manufacturers of forgings for use exclusively in the manufacture of forgings, in their own factories, under regulations prescribed by the Minister—(s.c. portion of 5022)

per ton	Free	$3.00	$3.00

This is an end-use item, involving a class-or-kind distinction; by far the most important item in the entire group covered by the item is "ingots".

Production: See note under existing item 377.

Imports: " " " " " "

Exports: " " " " " "

Ad valorem equivalents: " " " "

U.S.A. Duties: " " " " "

Bound Rates: The B.P. rate is bound to the United Kingdom under the note accompanying GATT (Geneva). The M.F.N. rate is bound at $3.00 (Geneva) *at request of the United Kingdom.*

Alloy-surtax: Does not apply at present to item 377c.

Cross-reference: Recommended Items Nos. 2(a), (b); 3.

As the item now stands, the Customs authorities have to administer the "class or kind" provision therein on the basis of such criteria as they deem appropriate; these might be considerations of weight, cross-section, internal or external diameter, etc. Since import data re tonnages and values of the goods entered thereunder are not segregated statistically, it is not possible to arrive at any precise conclusion as to the trade represented by the tariff item; hence, ad valorem equivalents of the M.F.N. duty of $3.00 per ton are not ascertainable.

Certain of the basic producers—notably Dosco and Dofasco—themselves forge some of their ingots into heavy forgings. Canada Foundries and Forgings, with plants at Brockville and Welland, make heavy forgings from (heavy) ingots weighing 20,000 pounds or more; ingots of this size, it contended, (while poured in Canada by Dosco and by Algoma for their own use) were not available commercially. For this reason, Canada Foundries and Forgings not only opposed cancellation of existing item 377c but urged the creation of a new item, to cover "forging ingots, round, corrugated, weighing not less than 20,000 (or even 30,000) pounds" on a duty-free basis. This request, while not welcomed by the basic group, was not wholly rejected by them at the public hearings.

Finished forgings enter for the most part under:

Item 392......	$17\frac{1}{2}$ p.c.	$27\frac{1}{2}$ p.c. $22\frac{1}{2}$ p.c.	30 p.c.
Item 392a.....	Free	15 p.c.	30 p.c.

EXISTING TARIFF ITEM 377d: BESSEMER BILLETS

377d: Billets of steel of Bessemer quality, when imported by manufacturers of seamless steel tubes for use exclusively in the manufacture of seamless tubes, in their own factories—(s.c. 5019)

Free	5 p.c.	5 p.c.

The use of Bessemer billets in the making of seamless tubes has almost disappeared and the history of the above item over the past decade or more is evidence of that fact.

Production: Not available.

Imports: Nil in 1954; nil in 1955.

Exports: Nil.

U.S.A. Duties: See note on items 377 and 377a.

Bound Rates: No bound rates.

Alloy-surtax: Does not apply to present item.

Cross-reference: Recommended Item No. 3(b).

EXISTING TARIFF ITEM 377e: WROUGHT IRON FORMS

377e: Wrought or puddled iron in the form of billets, bars, rods, sheets, strips or plates

Free (B.P. rate only)

General Note: This item, created in 1932 at the request of the United Kingdom, is inoperative and has been so for years. No imports; no production commercially; no bound margins; no request for continuance. If deleted, any particular form of wrought iron would fall under the substantive item for that form: e.g., wrought iron bars would be "bars". This will apply throughout the Schedule.

EXISTING TARIFF ITEM 377f: ROUNDS AND SQUARES

377f: Bars or rods, of iron or steel, hot rolled, viz.:—
Rounds over $4\frac{7}{8}$ inches in diameter and squares over 4 inches

per ton	Free	\$7.00	\$7.00
GATT		6.00	

This item was inserted in the Customs Tariff in 1937; it brought into force a concession in the Canada-United Kingdom Trade Agreement of 1937—the elimination of duty and binding of free entry under the B.P. The M.F.N. rate

was bound at $7.00 in the Canada-United States Agreement of 1938. The larger sizes of rounds and squares were not produced in Canada at the time of these Agreements and it was intended that the concessions would permit their entry at reduced rates of duty.

Production: Not separately recorded.

Imports: Usually have ranged between one and two thousand tons per annum; about 3 p.c. of total bar and rod imports. Since 1953 imported tonnages have declined each year. The United States has supplied over 70 p.c. with the United Kingdom shipping most of the balance—472 tons in 1955.

Exports: Nil.

Ad valorem equivalent: In 1955 this amounted to approximately 4·4 p.c. on imports from the United States.

U.S.A. Duties: It would appear that these vary from 8 to 13·5 p.c. with additional duties if specified alloying metals are present.

Bound Rates: B.P. bound at Free (GATT note);
M.F.N. rate bound at $6.00 per ton to Benelux (Geneva)

Alloy-surtax: Does not apply.

Cross-reference: Recommended Item No. 5(a).

At the public hearing, representatives of the Canadian basic steel producers confirmed that this item had been inserted into the Tariff at a time when the larger sizes of rounds and squares were not produced in Canada. They stated that larger sizes are now being made in Canada and recommended that this item be deleted. The Canadian Institute of Steel Construction recommended that rates of $4.25 per ton B.P. and $7.00 M.F.N. apply. These are the rates currently in force re item 378(a). The proposal to delete this item was not opposed by domestic users, either at the public hearing or in briefs submitted to the Board. The representative of the British Iron and Steel Federation pointed out that imports from the United Kingdom were small and stated that they were complementary to Canadian production.

EXISTING TARIFF ITEM 378: BARS AND RODS

Item 378 is the parent item in the Customs Tariff under which bars and rods are classified. Its four sub-divisions describe bars and rods on the basis of method of production and of processing. For many years, most imports entered under 378(a)—hot-rolled—but the major part of bar and rod imports now enter under other sub-divisions and, in particular, under 378(d), which provides for hot-rolled bars or rods valued at 4 cents or more per pound. Price increases in recent years have priced most bars at over 4 cents and left only a small residue under 378(a). Item 378 also embraces lightweight billets in bar sizes. The divisions of item 378 are as follows:

378: Bars and rods, of iron or steel; billets, of iron or steel weighing less than 60 pounds per lineal yard:—(s.c. 5071)

(a) Not further processed than hot rolled, n.o.p.

per ton	$4.25	$7.00	$7.00

This item was last revised in 1930, when the rates were identical with those currently in force.

Production: Total production of hot-rolled bars and sections was 528,521 tons in 1954 and 708,494 tons in 1955. Production of wire rods amounted to an additional 275,121 and 357,775 tons.

Imports: The volume of imports under this item has decreased steadily in post-war years. In 1955 they amounted to 1,831 tons, about ·3 p.c. of domestic production. This trend reflects the steadily increasing price of bars and rods, which are no longer classified under item 378(a) once their value reaches 4 cents per pound. The upturn in imports under this item in 1954 reflects the depressed prices in that year. Imports have been from the United Kingdom, the United States and Benelux.

Exports: These have shown substantial fluctuation. This reflects the fact that Canadian steel producers do not normally promote sustained commercial export sales; rather shipments abroad are usually on the basis of special arrangements.

	1948	1950	1952	1954
tons........	49,044	15,615	30,563	5,204

Ad valorem equivalents: In 1955 the ad valorem equivalent of imports from the United States was approximately 10 p.c. There were no imports from British countries in 1955; in 1954 the B.P. rate was the equivalent of 5·4 p.c.

U.S.A. Duties: Range from 8 to 13·5 p.c. with additional charges for certain alloying metals.

Bound Rates: B.P. bound at $4.25 per ton (GATT note);
M.F.N. bound at $7.00 per ton to the United States (Geneva).

Alloy-surtax: Item 389 provides for the application of a 5 p.c. surcharge to imports under item 378(a), if they contain certain specified alloying metals. However, imports under 378(a) are limited to bars and rods valued at under four cents a pound, therefore little or no alloyed steel enters under this item, the value of alloyed steel being much above 4 cents per pound.

Cross-reference: Recommended Items Nos. 3; 5(a).

The shift in classification (by reason of changing values) from item 378(a) to 378(d) means that the major part of bar and rod imports from the United Kingdom now enter duty free (they were previously dutiable at $4.25 a ton) and enjoy a greater margin of preference. This results not only from the reduced B.P. rate but also from the fact that the M.F.N. rate is higher under (d) than under (a).

At the public hearings, representatives of the basic steel producers asked that item 378(a) be deleted from the Customs Tariff. They stated that it was possible that prices of imported steel, particularly from Europe, might well fall below 4 cents a pound in the future and the $7.00 M.F.N. rate would then apply. They needed a higher duty as protection in possible periods of surplus supply, when imported prices were likely to be reduced.

The request for the deletion of this item was opposed at the hearing by a number of steel-consuming industries. The representatives of Canada Foundries and Forgings were in this group and stated that they faced strong import competition on their finished products. This firm receives rebates of duties on its imported steels under drawback items 1006 and 1009, and argued for the retention of these low duty privileges. Finished products produced by their firm are protected by duties ranging from 10 to 22½ p.c. Basic steel representatives commented that since the price of their steel is below that of imported steel, before the payment of duties, an increase in duties would not increase costs, since all the sizes required by Canada Foundries and Forgings are available from Canadian mills.

The Canadian Institute of Steel Construction requested that 378(a) be retained with its present rates of duty and that 378(d) be deleted. Under this suggestion the bulk of imported hot-rolled bars and rods would once again

be classified under (a), at $4.25 per ton B.P., and $7.00 M.F.N. The basic steel producers pointed out that the rate of duty on many fabricated steels, produced by the steel fabricators, is 17½ B.P. and 25 p.c., M.F.N.

The representative of John Inglis Co. Limited stated that in recent years price increases had resulted in all of their imports being classified under item 378(d) at 12½ p.c. M.F.N. He argued that this rate is not required since Canadian prices are close to those of United States steel producers. He therefore urged that item 378(d) be deleted and that imports at present dutiable under this item be classified under 378(a) at the rates at present applicable to that item.

The Morrow Screw and Nut Company Limited stated that its finished products are in keen competition with imports and any increase in duties on its raw materials could cause great hardship. Some of this company's imported steel enters under 378(a), although the greater part is classified under 378(d). In former years, when most bars could be imported under 378(a), drawback items 1023 and 1025 were used extensively in obtaining rebate of duties paid by this firm.

The automobile industry, represented by the Canadian Chamber of Commerce, stated that it did not import under item 378(a) and that its Canadian purchases of steel of the types classifiable under this item amounted to 189 tons in 1954. Its main comments on bars and rods are therefore dealt with under item 378(d).

378: Bars and rods, of iron or steel; billets, of iron or steel weighing less than 60 pounds per lineal yard:—

(b) Not further processed than hammered or pressed, n.o.p.—(s.c. 5074)

	10 p.c.	25 p.c.	30 p.c.
GATT		20 p.c.	

This item was established in 1930 and the wording remains unchanged. The B.P. rate was reduced in 1937 from 15 p.c.

Production: Not separately shown.

Imports: Very small; 225 tons in 1954 and 73 tons in 1955.

Exports: Not separately shown.

U.S.A. Duties: From 8 to 13·5 p.c. with additional charges for certain alloying metals.

Bound Rates: B.P. rate bound at 10 p.c. (GATT note);
M.F.N. rate bound at 20 p.c. to the United States (Torquay).

Alloy-surtax: Five p.c. surtax applies to imports under this item if valued under 6½ cents. In 1955 the average value of such imports was in excess of 20 cents per pound.

Cross-reference: Recommended Items Nos. 3; 5(c).

The basic steel producers made no proposals to change this item. No proposals of substance were made, at the public hearings, by importers or users of bars.

378: Bars and rods, of iron or steel; billets, of iron or steel weighing less than 60 pounds per lineal yard:—

(c) Cold rolled, drawn, reeled, turned or ground, n.o.p.—(s.c. 5072)

	10 p.c.	25 p.c.	30 p.c.
GATT		20 p.c.	

This item was established in 1930; in 1937 the B.P. rate was reduced from 15 to 10 p.c.

Production: Small, in relation to hot-rolled bars—28,651 tons in 1954 and 45,262 tons in 1955. Levels of output have fluctuated considerably.

Imports: Since 1951 imports have been declining generally; they have made up slightly more than 20 p.c. of domestic supply in recent years:

	1951	1953	1954	1955
tons.......	16,830	13,549	8,502	12,378

Exports: Not separately shown.

U.S.A. Duties: From 8 to 13·5 p.c. with additional charges for certain alloying metals.

Bound Rates: B.P. bound at 10 p.c. (GATT note);
M.F.N. bound at 20 p.c. to the United States (Geneva).

Alloy-surtax: Provision is made under 389 for the application of a surcharge of 5 p.c. on imports valued at not more than $6\frac{1}{2}$ cents per pound and containing certain alloying metals. In 1955 the average value of imports under this item was over 10 cents so that the surtax would not apply to the bulk of such imports.

Cross-reference: Recommended Items Nos. 3; 5(b), (c).

The basic steel producers made no proposals to change this item. No proposals in this regard were received from users or importers. Importers under this item are the saw, chain saw and automobile parts industry. The latter stated that they purchased cold-rolled bars abroad because of short supplies in Canada.

378: Bars and rods, of iron or steel; billets, of iron or steel weighing less than 60 pounds per lineal yard:—

(d) Hot rolled, valued at not less than 4 cents per pound, n.o.p.—(s.c. 5073)

Free $12\frac{1}{2}$ p.c. 15 p.c.

This item was established in 1930; in 1932 the B.P. rate was reduced from 5 p.c. to Free.

Production: Total production of hot-rolled bars has usually exceeded 700,000 tons in recent years:

	1951	1953	1954	1955
tons.........	763,005	732,275	528,521	708,494

Imports: The overall trend has been downward, although the demand for steel in 1955 caused an upturn:

	1951	1953	1954	1955
tons.........	111,757	58,702	29,391	47,230

Imports under this item and item 442 (farm machinery) account for the bulk of imported bars and rods. Total imports of hot-rolled bars and rods under all items, expressed as percentages of production, are as follows:

	1951	1953	1954	1955
p.c..........	13·0	8·2	7·8	7·8

Most imports are from the United States.

Exports: See comments under 378(a).

U.S.A. Duties: From 8 to 13·5 p.c. with an additional charge for certain alloying metals.

Bound Rates: B.P. rate bound at Free (GATT note);
M.F.N. rate bound at 12½ p.c. to the United States (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Items Nos. 3; 5(a).

Since most steel is now valued at over 4 cents per pound, more steel in the form of bars enters under this item than under any other item. As a consequence, numerous representations were received from users and importers. The basic steel producers recommended that this item be deleted and replaced by a new bar item, with rates of 10 p.c., 15 p.c. and 20 p.c.

The British Iron and Steel Federation was concerned with the proposed deletion of this item since the existing margin of preference is 12½ p.c. whereas under the proposed item it would be 5 p.c., a loss of 7½ p.c. in margin. Canadian steel producers stated that this item had originally been established to admit British specialty steel into Canada duty free. Now that the price of practically all steel was over 4 cents per pound, carbon steel also entered duty free. This was not the intent of the item since item 378(a) was established in 1930 to cover imports of carbon steel.

The Canadian Institute of Steel Construction recommended that item 378(d) be deleted and that all hot-rolled bars be dutiable at $4.25 per ton, $7.00 and $7.00. This would reduce the M.F.N. rate from 12½ p.c. to $7.00 on the fabricators' raw materials—bars. The basic steel producers pointed out that the protection on many fabricated steels is from 17½ p.c. to 25 p.c.

The John Inglis Co. Limited stated that they import under item 378(d) and they consider the M.F.N. rate of 12½ p.c. to be unnecessary, since Canadian prices are very similar to those in the United States. This company therefore urged the cancellation of this item and the classification of bars under 378(a) at $7.00 a ton M.F.N. This company emphasized that it was facing stiff import competition on its finished products and must therefore keep its costs to a minmum.

The Morrow Screw and Nut Company Limited stated that it must import some of its steel requirements under item 378(d) at 12½ p.c., thus increasing its costs. It stated that resort to imports was necessary since—(1) for wire rods, there is only one source of supply in Canada, which is unable to supply all Morrow Screw's needs; (2) the one Canadian supplier is also a producer of finished screws, nuts, etc.; (3) an increase in duty would increase the advantage of this competitor/supplier who does not have to import; (4) leaded bars are not made in Canada; (5) other types of bars are not available in a complete range of sizes. This company had greatly expanded its facilities within the year and had increased its demand for rods by 400 p.c. It receives an average of 20 p.c. protection on its finished products.

The Nicholson File Company of Canada Ltd. stated that it imported bars under item 378(d) at 12½ p.c. for manufacture into files and rasps, which are Free under the B.P. and dutiable at 22½ p.c. M.F.N. Imports of steel for the manufacture of files are, however, subject to 60 p.c. drawback under item 1009. This firm stated that its finished products faced import competition on a considerable scale and requested that it be permitted to obtain its steel requirements on a duty free basis. Canadian mills do not roll file steel because of its high carbon content, from 1·15 to 1·50 p.c. Rolling this type of steel is most difficult and many mills are unwilling to undertake the task. Representatives of the Canadian basic steel industry stated that there was little chance that it would make file steel in the near future.

The Machine Knife Industry imports bars under this item for the manufacture of industrial knives. Such bars are entirely of alloy steel of types produced only by Atlas Steels Limited in Canada. The knife manufacturers stated that they wished to have more than one source of supply. It was therefore

requested that the rates of duty applying under 378(d) not be increased as proposed by the basic steel producers. Instead representatives of the industry proposed that a special end-use item be established for imports of bars for the manufacture of industrial knives. They felt that this would be reasonable because the prices of alloy steels used for this purpose were as high as $1.50 a pound. Canadian basic steel producers pointed out that two of the larger Canadian knife manufacturers are subsidiaries of United States knife producers who have their own steel mills. The Canadian steel producers claimed that they can make the same types of steel as are imported from such mills if given the opportunity.

Canada Cycle and Motor Company asked that 378(d) be retained, since that company imports bars duty free from the United Kingdom.

Ontario Steel Products Limited stated that it is one of the largest users of hot-rolled bars in Canada. It used the following tonnages:

	1953	1954	1955
Imported	3,712	1,400	1,600
Domestic	28,400	18,256	28,700

These imports entered under 378(d). The imports were necessary because: (1) Canadian basic steel producers could not meet domestic demand; (2) Canadian producers could not meet quality specifications. Any increase in the duty would increase steel costs. (The full duty has not, in fact, applied because of the drawback provisions of item 1007.) The end products of this firm received protection of 17½ p.c. or 25 p.c., M.F.N. In spite of this very substantial spread, the company stated that it could not absorb even a moderate duty on its steel.

Representatives of the motor vehicle industry stated that in 1954 their industry used 60,580 tons of domestic steel and 5,739 tons of imported steel of the types described under item 378(d). Imports were necessary, they said, because Canadian mills could not meet their requirements or, in some cases, their specifications. They therefore asked that the existing 12½ p.c. M.F.N. rate be reduced to about $7.00 per ton, the rate applying to 378(a). The industry also utilizes drawback item 1007 and urged its retention.

Producers of garden tools, chains, ice skates, etc., also stated that they imported under item 378(d) and requested that the rates of duty not be increased.

EXISTING TARIFF ITEM 379: BARS AND RODS

379: Bars or rods, of iron or steel, including billets weighing less than 60 pounds per lineal yard, hot rolled, as hereunder defined, under regulations prescribed by the Minister:—

(a) Rods, when imported by manufacturers of horseshoe nails for use exclusively in the manufacture of horseshoe nails, in their own factories—(s.c. 5101)

Free Free Free

This item was last revised in 1930.

Production: See note on existing item 378.

Imports: Not separately recorded.

Exports: Nil.

Bound Rates: No rates are bound.

Alloy-surtax: Does not apply at present.

Cross-reference: Recommended Item No. 5(a).

The lack of any statistical data re imports is a reflection of the decline in importance of this item. It is extremely doubtful that the cost of administering it is longer justified. Horseshoe nails are probably dutiable as "nails" (item 430e at 15 p.c., 27½ p.c., 30 p.c.).

379: (b) Rods, in the coil, or bars, one and one-eighth of an inch in diameter and over, when imported by manufacturers of chain for use exclusively in the manufacture of chain, in their own factories—(s.c. 5102)

per ton	Free	$3.50	$3.50

Production: See note on existing item 378.

Imports: For 1954, about 100 tons, valued at $10,000; of which 60 plus tons valued at $7,500 from the United States and 30 tons valued at $3,000 from Belgium. Corresponding figures for 1955 are: 90 tons valued at $10,907, all from the United States.

Exports: Nil.

Bound Rates: No rates are bound.

Alloy-surtax Does not apply.

Cross-reference: Recommended Item No. 5(a).

The ad valorem equivalent of duties on imports from the United States in 1954 was about 3 p.c. and slightly more in the case of Belgian imports.

Duties on chain (disregarding all such chains as enter duty free for agricultural purposes) are as follows:

Item 406(a)	—wide diameter chain:	Free	5 p.c.	5 p.c.
(b)	—narrow " " :	15 p.c.	22½ p.c.	25 p.c.
407a	—chain, n.o.p. :	15 p.c.	22½ p.c.	35 p.c.
440f	—ship-chain :	Free	Free	Free

At the public hearings, domestic manufacturers of chain referred to the fact that, apart from free-entry for various end uses, the B.P. rates on dutiable items range from Free to 15 p.c. Imports of chain for ships are divided about equally between the United States and the United Kingdom, to a total in 1954 of $326,000. Wide-diameter chain (item 406(a)) came chiefly from the United Kingdom (free) to a value in 1954 of $77,000, with $57,000 from the United States. Of narrow-diameter chain (item 406(b)), the United States was chief supplier in 1954 ($93,000) followed by the United Kingdom ($56,000) and Germany ($35,000). Of chain, n.o.p., (item 407a), the United States supplied $704,000 and the United Kingdom, $73,000. In the year 1954, on all imports of chain from all countries—disregarding chain for agricultural purposes but including silent and roller chain, of a class or kind not made in Canada—the ad valorem equivalent of total duties paid was about 13·5 p.c.

379: (c) Bars, when imported by manufacturers of shovels for use exclusively in the manufacture of shovels, in their own factories—(s.c. 5076)

per ton	Free	$2.75	$3.00

This item was last revised in 1930.

Production: See note under existing item 378.

Imports: While there were no imports of bars made under this item in 1954 and 1955, imports in 1953 had been valued at $62,000 and in 1952 at $173,000—in both instances, entirely from the United States.

Exports: Nil.

Bound Rates: There are no bound rates.

Alloy-surtax: Not applicable to existing item.

Cross-reference: Recommended Item No. 5(a).

Practically nothing was said at the hearings by the tool companies producing *shovels* in so far as concerns this end-use item on bars—perhaps because of no imports in 1954. Also, manufacturers of shovels appear to be less concerned about bars as a raw material than about plate or sheet as such; this is covered by item 386(e), the note on which please see. Shovels are dutiable under item 431, at 10 p.c., 15 p.c., 20 p.c.

379: (d) Rods, in the coil, not over ·375 inch in diameter when imported by manufacturers of wire for use exclusively in the manufacture of wire, in their own factories—(s.c. 5103)

per ton	$2.25	$5.00	$5.00

This item was last revised in 1930.

Production: See general note re production of rods under item 378.

Imports: In 1954, valued at $722,000, of which $309,000 was from the United Kingdom, $250,000 from Germany and $74,000 from the United States. In 1953, imports had been valued at more than $1,000,000, with suppliers in the order named: United States, Belgium, Germany and the United Kingdom. The statistical picture of imports for 1955 was as follows: from the United Kingdom 1,668 tons valued at $148,353; Germany 4,108 tons valued at $408,801, and the United States 891 tons valued at $112,143.

Ad valorem equivalents: In 1954, when the United Kingdom was chief supplier, the ad valorem equivalent of duty on imports from that country was about 2·7 p.c. In the case of Germany in the same year, 6·5 p.c. and United States, 3·5 p.c. Corresponding figures for 1955 are: United Kingdom 2·5 p.c., Germany 5·0 p.c., and the United States 4·0 p.c.

Bound Rates: There are no bound rates.

Alloy-surtax: Does not at present apply.

Cross-reference: Recommended Item No. 5(d).

This end-use item was the subject of much discussion at the public hearings. Its deletion was vigorously opposed by those secondary industries which draw wire rods into wire and (in most instances) go on to make the wire into nails and other wire products. Their complaint was primarily that the Canadian producers of wire rods are themselves (or through subsidiaries) manufacturers of nails and, because of heavy demand, cannot release to the secondary group anything approaching their requirements of wire rods. Secondly, they drew attention to the low incidence of the specific duties on nails and to the severity of the competition faced on that product—particularly, of late, from Japan. Since they could not, under the terms of reference, seek an increase in the duties on nails, they pleaded for retention of the rates on rods; and particularly for the retention of tariff item 379(d) in its present form—unless, of course, it could be put on the free list. One company stated that wire rods represented 70 p.c. of the cost of production of nails.

The duties on wire, under the B.P. Tariff, ranged from Free to 15 p.c.; and under the M.F.N., from 10 to 25 p.c. The nail duty most referred to at the hearings was that under item 430c: per cwt., 40 cts., 55 cts., 60 cts.

379: (e) Bars of iron or steel, hot rolled, 5 inches in diameter and larger, when imported by manufacturers of polished shafting for use in their own factories—(s.c. 5075)

per ton	Free	$7.00	$7.00

This item was last revised in 1932.

Production: See general note re production of bars, under existing item 378.

Imports: None recorded since 1938.

Exports: Nil.

Bound Rates: B.P. rate bound under GATT note (Geneva);
M.F.N. rate bound to Benelux (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Item No. 5(a).

There was no discussion at the hearings specifically on this item. It may be that the makers of shafting now import their raw material (if at all) as "rounds" under item 377f (on which see note).

EXISTING TARIFF ITEM 380: PLATES

380: Plates of iron or steel, hot or cold rolled:—

(a) Not more than 66 inches in width, n.o.p.—(s.c. 5121)

per ton	$4.25	$8.00	$8.00

The purpose of this item has traditionally been to offer protection to plate in widths produced in Canada. By tracing the development of this item it is possible to obtain a fair idea of the development of Canadian plate-rolling facilities. In 1909 the Tariff used 30 inches in width as the dividing line, in 1930 it was 40 inches, in 1931—60 inches; this item, in its present wording and rates, came into force in 1932.

Production: In 1955, Canadian production was 253,640 tons: this was much above prewar (1937—95,600 tons) and is the post-war high; output in other years was as follows: 1950, 150,857 tons; 1953, 221,818 tons; 1954, 198,162 tons.

Imports: A minor proportion of plate imports now enters under item 380(a), the reason being that the bulk is classified under item 385 (plate valued at not less than 5 cents per pound). While the latter item was originally intended to deal with only the more expensive "specialty" steels, the price of even carbon steel is now over 5 cents per pound. As a result, only 14,219 tons of plate were imported under item 380(a) in 1955, out of a total plate importation of 134,087 tons. Over half of total plate imports are in widths of 78 inches or less, showing that Canadian users import large tonnages of the widths produced in Canada. This dependence on external supplies is illustrated by the fact that in 1955 imports accounted for 34·6 p.c. of total domestic supplies of plate. In recent years, the major portion of imports has been from the United States.

Exports: Small, if any.

Ad valorem equivalents: On imports from the United Kingdom in 1955, 4·7 p.c. and on imports from the United States, 8·5 p.c.

U.S.A. Duty: On plate valued at over 3 cents per pound, 10 p.c.

Bound Rates: B.P. Bound at $4.25 per ton (GATT note);
M.F.N. bound at $8.00 per ton to the United States (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Item No. 6(a).

The basic steel producers recommended that this item be deleted since plates up to almost 100 inches wide can now be rolled in Canada. They asked that it be replaced by an item making no distinction as to widths and having rates of 10 p.c. B.P. and 15 p.c. M.F.N. In supporting their request for increased tariff protection, the basic producers stated that they had lost a considerable volume of plate business in British Columbia in 1954 to overseas suppliers who were able to quote very low prices. Relatively high freight charges create competitive difficulties, the Canadian mills stated.

A number of users of steel plate requested that the rates of duty not be increased. Among these were pipe, boiler, motor vehicle manufacturers and steel fabricators. The latter proposed that plates should be dutiable at 5 p.c. B.P. and 7½ p.c. M.F.N. The John Inglis Co. Limited requested that plate of a width not made in Canada be dutiable at a reduced rate of duty. For certain purposes it is more economic to use wide plate since less welding is required. If the duty on such plate were reduced it could be used in place of the narrower domestic product. The representative of this company pointed out that there is a reduced rate of $5.00 a ton for imported plate for use in boilers. The delivered price of United States steel, plus this duty, was considerably above Canadian steel at Toronto, according to his data. This, he argued, showed there was no need for additional protection.

380: Plates of iron or steel, hot or cold rolled:—

(b) More than 66 inches in width, n.o.p.—(s.c. 5122 and 5154)

per ton	Free	$6.00	$6.00

This item has retained its present wording and rates since 1932. Prior to that year, somewhat similar items had been included in the Tariff. The purpose of this item and its predecessors was to provide for the entry, at reduced rates, of plate in widths not rolled in Canada.

Production: Available statistical data do not show production by widths. For total output of Canadian mills see under item 380(a).

Imports: Substantial tonnages have entered under this item; between 1950 and 1955 the level of imports per annum ranged between 48,000 and 65,000 tons. The price increases of August, 1956, brought the prices of most carbon plate to about 5 cents per pound, which will shift imports from 380(b) into 385. Imports in tons have been as follows:

	1950	1953	1954	1955
United Kingdom	37,723	5,424	19,266	11,388
United States	16,868	40,238	29,196	27,015
Total	55,308	50,218	50,457	48,077

Exports: Not separately shown.

Ad valorem equivalent of duties paid in 1955 for imports from the United States under this tariff item was 6·5 p.c.

U.S.A. Duty: On plate valued over 3 cents per pound—10 p.c.

Bound Rates: B.P. bound at Free (GATT note);
M.F.N. bound at $6.00 to the United States (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Item No. 6(a).

The basic steel producers recommended that this item be deleted and replaced by an item having rates of 10 p.c. B.P. and 15 p.c. M.F.N. A number of users of plate opposed this proposal; among them were producers of pipe, motor vehicles, boilers and fabricated steel. The Canadian Institute of Steel Construction proposed rates of 5 p.c. B.P. and 7½ p.c. M.F.N. The John Inglis Co. Limited stated that the landed cost of plate imported from the United States was already 8·9 p.c. above the price of Canadian plate; therefore an increase in duties could not be justified. The British Iron and Steel Federation said that item 380(b) was the most important item under which British plate entered Canada. Its elimination would harm their trade, they stated, by reducing the existing $6.00 per ton margin of preference. Imports from the United Kingdom had never amounted to more than a small proportion of Canadian production.

380: Plates of iron or steel, hot or cold rolled:—

(c) Flanged, dished or curved, n.o.p.—(s.c. 5123)

	5 p.c.	25 p.c.	30 p.c.
GATT		$22\frac{1}{2}$ p.c.	

This item was established in 1934; in 1937 the B.P. rate was reduced from 10 p.c.; the M.F.N. rate was reduced at Geneva in 1947.

Production: Not available.

Imports: Small, ranging from 1,000 to 3,000 tons per annum.

Exports: Not available.

U.S.A. Duty: 10 p.c.

Bound Rates: B.P. bound at Free (GATT note);
M.F.N. bound at $22\frac{1}{2}$ p.c. to the United States (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Item No. 6(b), (c).

The basic steel producers made no proposals to change this item. Flanged, dished or curved plate is apparently not produced by them. At the public hearing it was stated that plate in this form is occasionally produced by one or two steel fabricators in Canada and is really a semi-fabricated form, in much the same class as fabricated structurals. For this reason, it carries much the same rates as fabricated steel. The John Inglis Co. Limited testified that it had to import practically all of its requirements of dished plate. These are used as "heads" in the manufacture of pressure vessels. The duty of $22\frac{1}{2}$ p.c. exceeds, in many instances, the duty applying to the finished product. This company therefore proposed that the M.F.N. rate applying to item 380(c) be reduced to \$6.00 or \$8.00 per ton or the ad valorem equivalent.

380: Plates of iron or steel, hot or cold rolled:—

(d) With chequer, diamond or other raised pattern on contact surface—(s.c. 5125)

per ton	Free	\$8.00	\$8.00

This item was established in 1935 and has remained unchanged.

Production: None in Canadian basic steel industry.

Imports: Ranged from 4,500 tons in 1950 to 11,392 tons in 1955. Since there is no domestic production the increasing demand has been met entirely by rising imports, nearly all from the United States.

Exports: Nil.

Ad valorem equivalent: Based on the average value of imports in 1955 the duty was approximately 7 p.c.

U.S.A. Duty: It would appear that the United States duty is 10 p.c.

Bound Rates: B.P. bound at Free (GATT note);
M.F.N. bound at \$8.00 per ton to Benelux (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Item No. 6(a).

The basic steel producers recommended that this item be deleted from the Tariff, their reason being that it is not always essential to use plate with a surface pattern in many applications. To the extent that ordinary plate can be substituted for chequered plate, Canadian mills would gain business. Furthermore, one Canadian producer stated that it did have the rolls for producing chequered plate and was prepared to do so in widths up to 24 inches.

The representative of the Canadian Automobile Chamber of Commerce stated that most chequered plate is used as safety tread in factories and commercial vehicles. He pointed out that the higher price of chequered plate precluded its use for applications where ordinary plate would suffice. The small tonnage of chequered plate used in Canada could not, he said, be economically rolled in Canada.

The Canadian Institute of Steel Construction recommended rates of Free B.P. and 7½ p.c. M.F.N. on the grounds that chequered plate is not now rolled in Canada.

The British Iron and Steel Federation pointed out that the deletion of item 380(d) and the adoption of rates of 10 p.c. and 15 p.c. M.F.N. would reduce the margin of preference.

EXISTING TARIFF ITEM 381: SHEETS

This is the main item under which imports of steel sheets have been classified. However, price increases have resulted in substantial tonnages of sheet being classified under item 385 (sheet, etc. valued at 5 cents or over per pound).

381: Sheets, of iron or steel, hot or cold rolled:—

(a) ·080 inch or less in thickness, n.o.p.—(s.c. 5127)

7½ p.c.	20 p.c.	20 p.c.

This item was established in its present wording in 1930 with rates of 7½ p.c., 12½ p.c. and 12½ p.c. In 1932 the M.F.N. and General rates were increased to 20 p.c.

Production: Statistics for production are not sub-divided according to thickness. They are divided into hot- and cold-rolled, as shown:

Production of Sheet and Strip (tons)

	1950	1953	1954	1955
Cold-rolled........	437,931	566,269	516,390	535,365
Hot-rolled........	755,258	1,036,619	826,648	1,198,428

Imports: The range of imports has been between 35,000 tons (in 1954) and 81,000 tons (in 1951). In 1955, about 66,000 tons were imported; this is about 12 p.c. of domestic production of cold-rolled sheet and strip and 4 p.c. of hot- and cold-rolled. There is no noticeable trend in imports from 1950 to 1955. By far the major portion is from the United States.

Exports: Not separately available.

U.S.A. Duties: 10 p.c.

Bound Rates: B.P. bound at 7½ p.c. (GATT note);
M.F.N. bound at 20 p.c. to the United States (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Item No. 7(a), (b).

The basic steel producers recommended that this item be deleted and replaced by two new items, one covering hot-rolled sheet, with rates of 10 p.c. and 15 p.c. and the other covering cold-rolled sheet with rates of 12½ p.c. and 17½ p.c. They pointed out that the existing division of 0·08 inch in thickness has no meaning. This was agreed to by those present at the hearing. General Steel Wares, a user of sheet steel, went on record as welcoming the proposed reduction in the M.F.N. rate from 20 to 17½ p.c.

A number of steel users went on record as favouring substantially reduced rates for certain types of sheet. Montreal Locomotive Works stated that wide sheets are necessary for the construction of railway equipment; since sheet of over 50½ inches wide is not rolled in Canada, this company proposed that it should enter at a reduced rate. The automobile industry and automobile parts manufacturers supported the proposal for a special item with respect to wide sheets. They stated that they were often dependent on imported sheet in even the narrower widths, since Canadian mills are not always able to meet their requirements.

The Canadian Institute of Stove and Furnace Manufacturers, representing 21 companies, stated that the steel producers were not able to supply their requirements; claiming stiff import competition on its finished products, it requested that the cost of its raw materials not be increased by high tariffs.

The John Inglis Co. Limited said that a rate of 20 p.c. may have been necessary in the past to assist Canadian steel producers but that now they have modern equipment and no longer need such a high rate. In support of this statement, the John Inglis representative said that the landed cost of United States steel, duty paid, was already considerably above that of Canadian steel. He therefore proposed lower duties than those proposed by the steel producers.

381: Sheets, of iron or steel, hot or cold rolled:—

(b) More than ·080 inch in thickness, n.o.p.—(s.c. 5126)

per ton	$4.25	$6.00	$7.00

Production: See note under item 381(a).

Imports: Have ranged from 36,000 tons in 1950 to a low of 21,000 tons in 1955 (approximately 1 p.c. of hot- and cold-rolled sheet and strip output in 1955). Practically all imports are from the United States.

Exports: No statistics available.

Ad valorem equivalents: Based on imports from the United States in 1955, 6·6 p.c.; on imports from the United Kingdom, 3·0 p.c.

U.S.A. Duties: 10 p.c.

Bound Rates: B.P. bound at $4.25 per ton (GATT note);
M.F.N. bound at $6.00 to the United States (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Item No. 7(a), (b).

The basic steel producers recommended that this item be deleted and replaced by a new item carrying rates of 10 p.c., 15 p.c., and 25 p.c. The existing specific rates are inadequate, they stated, to encourage the production of sheet steel in Canada. Nevertheless, the expansion in output of sheet steel has been greater than for any other form of steel.

A number of sheet users recommended that the rates of duty applicable to sheet over 0·08 inch in thickness be not increased. The Canadian Institute of Stove and Furnace Manufacturers said that about 20 p.c. of their total imports entered under 381(b); in particular, sheet for non-vitreous enamelling. In view of competition from imported stoves and furnaces, they asked that duties should not be increased. Ontario Steel Products stated that they used about 1,200 tons per annum of sheets of over 0·08 inch in thickness. Until the present time this company had been able to obtain only about 300 tons from Canadian mills, which, it said, have produced this gauge only since 1954. However, the representative of Ontario Steel Products said that a Canadian mill had recently undertaken to supply 80 p.c. of its requirements of this gauge in the future. In opposing the recommended increase, this company pointed out that the extra duty alone would amount to $18.50 a ton on pre-August 1956 price levels.

EXISTING TARIFF ITEM 382: HOOP, BAND OR STRIP

These items were established in order to segregate hoop, band or strip (steel in narrow widths) from sheet (steel in wider sections).

382: Hoop, band or strip, of iron or steel:

(a) Hot rolled, ·080 inch or less in thickness, n.o.p.—(s.c. 5112)

	5 p.c.	15 p.c.	15 p.c.
GATT		$12\frac{1}{2}$ p.c.	

This item was established in 1930 in its present wording with rates of $7\frac{1}{2}$ p.c., $12\frac{1}{2}$ p.c. and $12\frac{1}{2}$ p.c. In 1932, the rates were revised to $7\frac{1}{2}$ p.c., 15 p.c., and 15 p.c.; in 1937, the B.P. was reduced to 5 p.c. under a trade agreement with the United Kingdom; in 1948, the M.F.N. rate was reduced to $12\frac{1}{2}$ p.c. under GATT.

Production: Not available.

Imports: From all countries:

	1950	1953	1954	1955
tons................	1,918	153	648	537

The United States is the major supplier in most years, although the United Kingdom shipped substantial tonnages in 1950, 1951 and 1954.

U.S.A. Duty: Apparently $12\frac{1}{2}$ p.c.

Bound Rates: B.P. bound at 5 p.c. (GATT note);
M.F.N. bound at $12\frac{1}{2}$ p.c. to the United States (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Items Nos. 7(a); 10.

The basic steel producers recommended that this item be deleted and that imports of hoop, etc. enter under the same item as sheet. In support of their proposal they said that the existing division based on thickness has no meaning since all gauges are now rolled in Canada; furthermore, there is no logic in the many diverse rates which apply to item 382, they contended.

Certain steel users opposed the proposal to increase the M.F.N. rate to 15 p.c. on the ground that it would increase their costs.

Both producers and users agreed that this item is of much less importance than formerly, since hoop, etc. valued over 5 cents per pound now enters under item 385.

382: Hoop, band or strip, of iron or steel:

(b) Hot rolled, more than ·080 inch in thickness, n.o.p.—(s.c.5113)

per ton	$3.00	$8.00	$8.00
GATT		7.00	

This item was established in 1930 in its present wording with rates of $4.25, $6.00 and $7.00 per ton. In 1932 the rates were revised to $4.00, $8.00 and $8.00 per ton. The B.P. rate was reduced to $3.00 under a trade agreement with the United Kingdom; the M.F.N. rate was reduced to $7.00 in 1948 under GATT.

Production: Not available.

Imports:	1950	1953	1954	1955
tons................	3,255	2,130	1,636	1,936

The United States is the chief supplier, with considerably smaller tonnages being shipped from the United Kingdom.

Exports: Not available.

Ad valorem equivalents: B.P. in 1955, 4·7 p.c.; M.F.N.—based on imports from the United States in 1955, 8 p.c.

U.S.A. Duty: Apparently $12\frac{1}{2}$ p.c.

Bound Rates: B.P. bound at $3.00 per ton (GATT note);
M.F.N. bound at $7.00 per ton to the United States (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Items Nos. 7(a); 10.

The basic steel producers recommended that this item be deleted (see comments under item 382(a)). Manufacturers of motor vehicles, motor vehicle parts, and pipes opposed any increase in rates stating that they must import and that the proposed rates of 15 p.c. or $17\frac{1}{2}$ p.c., as recommended, would increase their costs. It was generally agreed that item 385 had largely superseded this item.

382: Hoop, band or strip, of iron or steel:
(c) Cold rolled or cold drawn, ·080 inch or less in thickness, n.o.p.—(s.c. 5114)

$7\frac{1}{2}$ p.c.	20 p.c.	20 p.c.

This item was established in 1930 in its present wording with rates of $7\frac{1}{2}$ p.c., $12\frac{1}{2}$ p.c. and $12\frac{1}{2}$ p.c. The existing rates became effective in 1932.

Production: Not available.

	1950	1953	1954	1955
Imports:				
tons...........	8,192	8,337	1,633	5,203

Mostly from the United States.

Exports: Not available.

U.S.A. Duty: Apparently $12\frac{1}{2}$ p.c.

Bound Rates: B.P. bound at $7\frac{1}{2}$ p.c. (GATT note);
M.F.N. bound at 20 p.c. to the United States and Sweden (Geneva and Annecy).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Items Nos. 7(b); 10.

The basic steel producers recommended that this item be deleted (see comments re item 382(a)).

The Automobile Chamber of Commerce opposed the proposal to have these products dutiable at $17\frac{1}{2}$ p.c. since this is the same rate as applies to their finished products. McKinnon Industries Limited welcomed the proposal to reduce the M.F.N. rate from 20 p.c. but proposed that the rate on cold-rolled strip be not greater than that applying to hot-rolled strip. The automobile and automobile parts industries are probably the largest users of strip. Canada Cycle and Motor stated that they import strip for bicycle rims under this item. Since the finished rims are duty free, they would not wish the B.P. duty to increase from the present $7\frac{1}{2}$ p.c. rate to the proposed $12\frac{1}{2}$ p.c. rate.

382: Hoop, band or strip, of iron or steel:
(d) Cold rolled or cold drawn, more than ·080 inch in thickness, n.o.p.—(s.c. 5115)

	$12\frac{1}{2}$ p.c.	$27\frac{1}{2}$ p.c.	30 p.c.
GATT		$22\frac{1}{2}$ p.c.	

This item was established in 1930 in its existing wording, with rates of 15 p.c., $27\frac{1}{2}$ p.c. and 30 p.c. In 1937, the B.P. rate was reduced to $12\frac{1}{2}$ p.c. under the terms of a trade agreement with the United Kingdom. The M.F.N. rate was reduced to $22\frac{1}{2}$ p.c. under GATT.

Production: Not available.

Imports: In most years imports amounted to between 1,000 and 1,300 tons, with practically all originating in the United States.

Exports: Not available.

U.S.A. Duty: Apparently $12\frac{1}{2}$ p.c.

Bound Rates: B.P. bound at $12\frac{1}{2}$ p.c. (GATT note);
M.F.N. bound at $22\frac{1}{2}$ p.c. (Torquay).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Items Nos. 7(b); 10.

The basic steel producers recommended that this item be deleted (see comments under item 382(a)).

Steel users agreed with the proposal to reduce the existing M.F.N. rate of $22\frac{1}{2}$ p.c. and requested that cold-rolled be dutiable at the same rate as hot-rolled strip.

EXISTING TARIFF ITEM 383: FLAT STEEL, COATED

This item provides for the classification of steel coated with other metals or other substances. Steel which has only a protective coating, e.g. oil, would not be classified under this item.

383: Sheets, plates, hoop, band or strip, of iron or steel:

(a) Coated with tin, of a class or kind not made in Canada, n.o.p.—(s.c. 5137)

	Free	15 p.c.	15 p.c.
GATT		10 p.c.	

This item was established in its existing wording in 1930 with rates of Free, 5 p.c. and 5 p.c. In 1932 the rates were revised to Free, 15 p.c. and 15 p.c. The M.F.N. rate was reduced to 10 p.c. in 1948 under GATT.

Production: Canadian production is substantial and supplies practically all domestic requirements. This has resulted from the installation of three electrolytic tinning lines in Canadian steel mills. Production has been as follows:

	1950	1953	1954	1955
tons.........	229,424	244,742	240,966	286,249

Imports: Imports under items 383(a) and (b) are combined in the Dominion Bureau of Statistics trade statistics. The totals are very small in relation to production:

	1950	1953	1954	1955
tons.............	1,612	7,215	10,210	10,782

Exports: Not available.

U.S.A. Duty: $20.00 per ton; on the basis of the United States price for electrolytic tinplate early in September, this amounted to about 12 p.c. in ad valorem terms.

Bound Rates: B.P. bound at Free (GATT note);
M.F.N. bound at 10 p.c. to Benelux (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Items Nos. 7(c); 10.

The basic steel producers recommended that all tinplate be classified under one item at rates of 15 p.c. Since all types of tinplate are made in Canada this item serves no purpose. The only comment on this proposal was from the British Iron and Steel Federation which said that it shipped "tin sheet" under item 383(a), a product not tinplate, but steel covered with a very heavy coating of tin, used in the production of maple syrup and dairy-produce machinery. Apart from this product, the United Kingdom had no comment on this item.

383: Sheets, plates, hoop, band or strip, of iron or steel:
(b) Coated with tin, n.o.p.—(s.c. 5137)

	15 p.c.	15 p.c.	20 p.c.

This item was established in its present wording in 1930 with rates of $7\frac{1}{2}$ p.c., $12\frac{1}{2}$ p.c. and 15 p.c. In 1932 the rates were revised to Free, 20 p.c. and 20 p.c. In 1948 the B.P. and M.F.N. rates were revised to 15 p.c. under GATT.

Production, Imports and Exports: See under 383(a).

U.S.A. Duty: $20.00 per ton.

Bound Rates: B.P. bound at 15 p.c. (GATT, Part II);
M.F.N. bound at 15 p.c. to the United States (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Items Nos. 7(c); 10.

The basic steel producers recommended that one item be established for the importation of tinplate with rates identical to those at present applying to item 383(b). This recommendation was not opposed (see comments under item 383(a)).

383: Sheets, plates, hoop, band or strip, of iron or steel:
(c) Coated with zinc, n.o.p.—(s.c. 5140)

	$7\frac{1}{2}$ p.c.	20 p.c.	20 p.c.
GATT		$17\frac{1}{2}$ p.c.	

This item was established in its existing wording in 1930 with rates of $7\frac{1}{2}$ p.c., $12\frac{1}{2}$ p.c. and 15 p.c. In 1932 the rates were revised to $7\frac{1}{2}$ p.c., 20 p.c. and 20 p.c. The M.F.N. rate was reduced to $17\frac{1}{2}$ p.c. in 1948 under GATT.

Production: Rose sharply in 1955 as new uses for this product are being rapidly developed.

	1950	1953	1954	1955
tons.........	99,130	108,945	103,642	160,559

Imports: These have been steady, at about 20 p.c. of output; in 1955 they decreased as a proportion of domestic production. The United States is by far the chief supplier. Total imports were as follows:

	1950	1953	1954	1955
tons.........	22,995	23,552	20,460	22,706

Exports: Not available.

U.S.A. Duty: 10 p.c. plus $2.00 per ton.

Bound Rates: B.P. bound at $7\frac{1}{2}$ p.c. (GATT note);
M.F.N. bound at $17\frac{1}{2}$ p.c. to the United States (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Items Nos. 7(d); 10.

The basic steel producers recommended that this item be deleted and replaced by an item carrying rates of 12½ p.c., 17½ p.c. and 30 p.c. The chief feature of the proposal is the increase in the B.P. from 7½ p.c. to 12½ p.c.

A number of users commented at the public hearings on the basic producers' proposals. General Steel Wares stated that it had no objections to the proposed increase in the B.P. rate. Porcelain and Metals Products, Limited said that Canadian produced galvanized sheets have a spangle pattern which cannot be chemically treated in a manner which would assure good adhesion of paint. This firm imports from the United Kingdom and requested that the B.P. rate not be increased. British galvanized is produced by electrolytic means whereas Canadian production is hot-dipped.

Moffats Limited stated that they imported a special type of galvanized sheet used in the manufacture of stoves. This company did not object to an M.F.N. rate of 17½ p.c.

The Canadian Automobile Chamber of Commerce requested that an item be established for electrolytic zinc-coated sheets since these are not produced in Canada.

United-Carr Fastener Company of Canada Limited stated that they could not obtain galvanized strip to sufficiently fine tolerances in Canada for the manufacture of cosmetic containers. This firm therefore requested that galvanized strip, 4 inches or less in width, 0·08 inch or less in thickness be admitted duty free.

The British Iron and Steel Federation stated that item 383(c) is most important to them. The proposal to increase the B.P. would disrupt their trade with Canada, particularly in electro-galvanized sheets. Representatives of the Federation stated that this type of galvanizing simply complemented Canadian production of hot-dip.

383: Sheets, plates, hoop, band or strip, of iron or steel:
(d) Coated with metal or metals, n.o.p.—(s.c. 5139)

	5 p.c.	12½ p.c.	15 p.c.
GATT		10 p.c.	

This item was established in 1930 in its existing wording with rates of 7½ p.c., 12½ p.c. and 15 p.c. Under the terms of the Canada-United Kingdom Trade Agreement of 1937 the B.P. rate was reduced to 5 p.c. The M.F.N. rate was reduced 10 p.c. in 1948 under GATT.

Production: Although statistics are not available, it can be assumed that production has not been large.

Imports: Relatively small, ranging from 535 tons to 1,195 tons in recent years. Import data do not indicate the metals used in coating although a considerable proportion is probably terneplate (lead coated).

Exports: Nil.

U.S.A. Duty: 10 p.c. plus $2.00 per ton.

Bound Rates: B.P. bound at 5 p.c. (GATT note);
M.F.N. bound at 10 p.c. to the United States (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Items Nos. 7(e); 10.

The basic steel producers recommended that this item be deleted and replaced by an item bearing rates of 12½ p.c., 17½ p.c. and 35 p.c.

A number of manufacturers of stoves stated that they import aluminized and chrome-coated steel under this item. They requested that the existing duties not be increased since competition from imported stoves was already great and would be more difficult to meet if material costs were increased by higher duties.

One manufacturer, present at the hearings, said that he imported zinc-covered strip for the manufacture of cosmetic containers. This metal, which has certain desirable qualities for the purpose, cannot be obtained in Canada. This manufacturer therefore requested that it be admitted duty free.

The Armco Drainage Company imports sheet steel with aluminum coating. Since this type of sheet is not made in Canada, this company requested it be dutiable at 3 p.c., 7½ p.c. and 15 p.c. The American Nickeloid Company sells "preplated" sheet in Canada; its products are coated with nickel, chrome, copper and brass. To the knowledge of this company, coated steel of these types was not being produced in Canada. The use of such steel results in certain economies of production which, according to the spokesman, assisted Canadian manufacturers of electrical appliances, chrome kitchenware, etc., in competing with imports of corresponding finished products. He therefore requested that the rates not be increased.

383: Sheets, plates, hoop, band or strip, of iron or steel:

(e) Coated with paint, tar, asphaltum or otherwise coated, n.o.p.—(s.c. 5135)

5 p.c. 12½ p.c. 15 p.c.

This item was established in 1930 with rates of 7½ p.c., 12½ p.c. and 15 p.c. Under the provisions of the Canada-United Kingdom Trade Agreement of 1937 the B.P. was reduced to 5 p.c.

Production: No statistics available.

Imports: Fairly substantial, practically all from the United States:

	1950	1952	1953	1954	1955
tons.......	8,818	9,633	8,766	7,716	12,174

Exports: No statistics available.

U.S.A. Duty: 12½ p.c.

Bound Rates: B.P. bound at 5 p.c. (GATT note);
M.F.N. bound at 12½ p.c. to the United States (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Items Nos. 7(e); 10.

The basic steel producers recommended that this item be deleted and that a new item be established consolidating all coated items, except tinned, with rates of 12½ p.c., 17½ p.c. and 35 p.c.

The representative of one fabricator stated at the public hearing that his firm imported "asbestos bonded" steel, used in the fabrication of acid or alkali resisting culverts. Since no Canadian mill produces asbestos-coated steel it was proposed by their user that the rates should be 5 p.c., 7½ p.c. and 15 p.c. The representative of this firm stated that, in his view, when the steel producers proposed the deletion of this item from the tariff they thought that most imports under it were simply painted or coated with asphalt, which added relatively little to costs. Perhaps they did not realize that several thousand tons of relatively costly asbestos-bonded sheet also entered under this item. The proposed increase in duty would add considerably to the cost of such sheets.

383: Sheets, plates, hoop, band or strip, of iron or steel:

(f) Coated with vitreous enamel, n.o.p.—(s.c. 5136)

10 p.c. 20 p.c. 25 p.c.

This item was established in its present wording in 1930 when the rates were 15 p.c., 20 p.c. and 25 p.c. The B.P. rate was reduced to 10 p.c. under the terms of the Canada-United Kingdom Trade Agreement of 1937.

Production: No statistics available. In Canada, the basic steel mills do no enamelling; this is done by various secondary steel fabricators.

Imports: Very small, although apparently increasing; the United States and the United Kingdom are the suppliers.

	1950	1952	1954	1955
tons................	nil	18	154	370

Exports: Nil.

U.S.A. Duty: Apparently from 10 p.c. to 15 p.c., the rate being greater on lower cost types.

Bound Rates: B.P. bound at 10 p.c. (GATT note);
M.F.N. bound at 20 p.c. (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Items Nos. 7(c); 10.

The basic steel producers recommended that this item be incorporated into a new item for coated steel with rates of 12½ p.c., 17½ p.c. and 35 p.c. This would involve an increase in the B.P. rate and a reduction in the M.F.N. rate. No comments were made by users of this type of coated steel.

383: Sheets, plates, hoop, band or strip, of iron or steel:
(g) Corrugated or pebbled, coated or not—(s.c. 5134)
10 p.c. 20 p.c. 25 p.c.

This item was established in 1930 with the present wording and rates of 15 p.c., 20 p.c. and 25 p.c. The B.P. rate was reduced in 1937 under the terms of a trade agreement with the United Kingdom.

Production: No statistics available.

Imports: Fairly substantial tonnages have been imported, nearly all from the United States.

	1950	1952	1953	1954	1955
tons........	4,471	6,072	8,344	6,157	8,375

Exports: No statistics available.

U.S.A. Duties: If corrugated 10 p.c.; if corrugated and coated 10 to 15 p.c.

Bound Rates: B.P. bound at 10 p.c. (GATT note);
M.F.N. bound at 20 p.c. to the United States (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Items Nos. 7; 10.

The basic steel producers recommended that this item be deleted from the Tariff. Under their proposals, imports would be dutiable at 10 p.c., B.P. and 15 p.c. M.F.N. if not coated and 12½ p.c. B.P. and 17½ p.c. M.F.N. if coated. They stated at the public hearings that steel is no longer pebbled and that provision for this process is no longer required. In the past it had been used in preparing sheet for use in the construction of elevators. One steel user stated that his company imported substantial tonnages of corrugated sheet bonded with asbestos. This product (with the asbestos bonding) is not made in Canada and he requested that provision be made to permit it to enter at rates of 5 p.c. B.P. and 7½ p.c. M.F.N.

384: Skelp of iron or steel, hot rolled, when imported by manufacturers of pipes and tubes for use exclusively in the manufacture of pipes and tubes, in their own factories, under regulations prescribed by the Minister—(s.c. 5149 and 5150)

Free 5 p.c. 5 p.c.

This item was last revised in 1950.

Production: Since the tariff item above quoted specifically defines the skelp admissible thereunder as being hot-rolled only, it is difficult to give precise information relative to Canadian production. This is due to the fact that until very recently there were fewer than three producers of hot-rolled skelp, which meant that returns of production supplied by them to the Bureau of Statistics were not made public. As of 1955, when there were three producers, total production was 247,701 tons. There is the further complication as regards import data, that many Canadian manufacturers of pipes and tubes think of "skelp" as being a generic term covering all such flat-rolled forms of iron or steel as are or may be used to manufacture pipes or tubes, whether hot-rolled or cold-rolled. All of them have had access, as regards cold-rolled sheet or strip for pipe-making, to tariff item 386(r) (the note on which please see) bearing the same rates of duty as does item 384. A third complication in connection with skelp as the word has traditionally been believed to mean is that certain domestic producers of skelp (so-called) who themselves rely upon imports of *Bessemer* skelp, not available in Canada, are also manufacturers of pipes and tubes, competing in the Canadian market with pipe or tube makers dependent to a very considerable extent on imported raw materials. Due to the increase in the number of Canadian producers of skelp, it will in subsequent years probably be in order for the Bureau of Statistics to reveal more information regarding the volume and value of domestic production.

Imports: Imports of skelp, hot-rolled, are published by the Bureau under tariff item 384, but with reference direct to tariff item 397(a) (s.c. 5149) and tariff item 397(b) (s.c. 5150) as follows:

Year	ex U.K.	ex U.S.A.	ex Belgium	ex Germany	ex France
For making pipe classifiable under item 397(a):					
1952.......	$344,000	$6,309,000	$1,448,000	$28,000	$166,000
1953.......	442,000	6,738,000	1,126,000	845	208,000
1954.......	nil	3,538,000	645,000	198,000	nil
1955.......	nil	6,141,000	55,000	134,000	nil
For making pipe classifiable under item 397(b):					
1952.......	nil	$3,564,000	nil	nil	nil
1953.......	nil	740,000	5,180	nil	nil
1954.......	nil	636,000	22,391	nil	nil
1955.......	nil	1,348,000	110,000	nil	nil
Total under both tariff items:					
1952.......	$344,000	$9,783,000	$1,448,000	$28,000	$166,000
1953.......	442,000	7,478,000	1,131,000	845	208,000
1954.......	nil	4,174,000	667,000	198,000	nil
1955.......	nil	7,489,000	165,000	134,000	nil

The above tables show imports on the basis of value. The total tonnages imported, under both tariff items, for the years 1952-1954, inclusive, were as follows: from U.S.A., 120,250 tons; from Belgium, 13,500 tons; from U.K.,

2,947 tons; from Germany, 220 tons; and from France, 1,636 tons. The corresponding tonnages imported in 1955 were: from U.S.A., 81,877 tons; from Belgium, 1,653 tons; and from Germany, 1,494 tons. These tonnages relate, of course, only to hot-rolled skelp, and do not include imports of cold-rolled flats used as skelp, under item 386(r).

Since the U.S.A. has been for some years by far the chief source of supply, it is of interest to note (1) the value in dollars of hot-rolled skelp imported from that country in the years 1952-54, inclusive, dropped from $9,783,000 in 1952 to $4,174,000 in 1954 but rose in 1955 to $7,489,000. The value per ton, ex U.S.A., in 1955 was $91.00.

Exports: Nil.

Bound Rates: B.P. bound under GATT note (Geneva);
M.F.N. bound to the United States (Geneva).

Alloy-surtax: Does not apply at present.

Cross-reference: Recommended Item No. 11.

EXISTING TARIFF ITEM 384a: HOOP STEEL

384a: Hoop steel, hot rolled, with mill or rolled edges, plain or coated, ·0972 inch or less in thickness, not more than three inches in width, for use in the manufacture of hoops for barrels or kegs—(s.c. nil)

Free	Free	12½ p.c.

This is an Order-in-Council item, created in 1954.

Production: See general note on sheet and strip under existing items 381 and 382.

Imports: Not separately recorded. See in this connection the note re existing item 386(q).

Exports: Nil.

Bound Rates: No rates are bound.

Alloy-surtax: Does not apply at present.

Cross-reference: Recommended Item No. 10.

EXISTING TARIFF ITEM 385: SHEETS, ETC. VALUED OVER 5 CENTS PER POUND

385: Sheets, plates, hoop, band or strip, of iron or steel, hot rolled, valued at not less than five cents per pound, n.o.p.—(s.c. 5132)

Free	12½ p.c.	15 p.c.

This item was established in 1930 in its present wording with rates of 5 p.c. 12½ p.c. and 15 p.c. The B.P. was reduced to Free in 1932.

Production: The major portion of sheet and plate steel production is now valued at 5 cents or more per pound, including extra charge. Canadian output has been as follows:

	1950	1953	1954	1955
Plate....................tons	150,857	221,818	201,939	253,640
Hot-rolled sheet..........tons	755,258	1,036,619	826,648	1,198,428
Cold-rolled sheet........tons	437,931	566,269	516,390	535,365

Imports: Sheet, plate and strip enter under this item; it is not possible to separate imports of the various forms. Greater tonnages of flat steel are classified under this item than any other, e.g.:

		1950	1953	1954	1955
U.K.	tons	1,682	30,261	5,857	6,715
U.S.A.	tons	36,290	75,665	41,006	86,132
Belgium	tons	2,139	906	84	1,419
Total	tons	40,615	108,043	47,055	97,097

Exports: Not available.

U.S.A. Duty: 10 p.c.

Alloy-surtax: Does not apply.

Bound Rates: B.P. bound at Free (GATT note);
M.F.N. bound at 12½ p.c. to the United States (Geneva).

Cross-reference: Recommended Items Nos. 6(a); 7(a); 10.

When this item was established it was intended to cover the so-called specialty steels which had, and still have, many times the value of carbon steels. Steadily increasing prices have, however, brought even carbon steel prices to 5 cents or over, while specialty steels are much above this amount. As a consequence, this item has become the substantive item under which plate and sheet are classified. A number of fortuitous circumstances have resulted: imports of plates and sheet, formerly dutiable, now enter duty free under the B.P.; the margin of preference is greater under this item than under the items where flat-rolled steel was previously classified; the M.F.N. rates are increased in a number of instances while in others they are reduced.

The basic steel producers recommended that this item be deleted. Imports would then enter, according to their proposal, under plate and sheet items, at rates of 10 p.c. B.P. and 15 p.c. M.F.N.

A considerable number of steel users commented on this proposal. The Nicholson File Company of Canada Limited stated that it imports file steel under this item. Steel for files is not rolled in Canadian mills, therefore the company requested that steel for this purpose should be permitted to enter duty free. The basic steel producers agreed that this type of steel is not rolled in Canada and is unlikely to be rolled in the near future.

The Canadian Institute of Steel Construction recommended that plates be deleted from item 385 and made dutiable at rates of 5 p.c. and 7½ p.c. Fabricated steel plate is dutiable at 25 p.c.

The John Inglis Co. Limited imports plate and sheet under 385; it recommended that this item be deleted and that imports be classified under 380(a) and (b) at the existing rates for these items. This company argued that Parliament had never intended this item to apply to carbon plates, whereas it had intended items 380(a) and 380(b) to apply. Furthermore, it stated, the existing Canadian prices are so much below landed United States prices that there is no case for giving still greater protection. United States competitors of John Inglis have substantially lower raw material costs and it would handicap Canadian production of secondary steel products if material costs were to be increased through higher tariffs.

The Montreal Locomotive Works stated an interest in this item and requested that rates not be increased since, it said, the capacity of Canadian mills to roll plate is limited. As a result, it is necessary to import plate in given sizes.

General Motors Diesel stated that certain sizes of very heavy plate could not be procured from Canadian mills. This company therefore opposed an increase in rate on such steel since this would increase its costs. This firm also imports sheets under 385 and requested that such imports revert to items 381(a) and (b).

The British Iron and Steel Federation pointed to the fact that only in a few years had imports from the United Kingdom been substantial, and even then they had not exceeded 17 p.c. of Canadian production. The Federation's representative said that freight charges, remoteness from the market, etc. created difficulties for British suppliers. To substantially increase the duty (from Free) would add to these difficulties. Furthermore, since Canadian steel users require more plate than can at present be obtained, the imposition of a duty on imports from Britain would also penalize the user.

The Canadian Electrical Goods Manufacturers Association stated that they use large tonnages of plates in the manufacture of transformers. This industry recommended that the $12\frac{1}{2}$ p.c. M.F.N. rate be retained.

General Steel Wares Ltd. said that it uses sheet steel valued at over 5 cents per pound in considerable tonnages. This steel is used in the manufacture of boilers, refrigerators and household durables; alleging keen competition in these finished products from imports, this company opposed any increase in existing rates.

The motor vehicle manufacturing industry testified that it imports sheet steel under this item since Canadian mills cannot meet all of its requirements. This industry wished to maintain alternative sources of supply in the United States, particularly in periods of short supply. It therefore urged that rates not be increased.

Ontario Steel Products Limited, auto parts manufacturers, informed the Board that until 1954 no Canadian steel mill could produce acceptable steel for automobile bumpers. One mill can now do so, but demand exceeds production so that it is necessary to import. Because of low volume bumper output and high die costs, this industry stated that it could not afford to pay more for its steel.

One firm, Engineering Products of Canada, regretted the existing shortage of steel, but said that it would not in the longer term object to a $2\frac{1}{2}$ p.c. increase in rate.

EXISTING TARIFF ITEM 385a: RUST, ACID, HEAT RESISTING SHEETS, PLATES, ETC.

385a: Sheets, plates, hoop, band or strip, of rust, acid or heat resisting steels, hot or cold rolled, polished or not, valued at not less than five cents per pound—(s.c. 5133)

	Free	20 p.c.	20 p.c.
GATT		$12\frac{1}{2}$ p.c.	

This item was established in 1932 and is an extract from 385. The M.F.N. rate was reduced in 1948 under GATT.

Production: Not available.

Imports: Not extensive:

	1950	1953	1954	1955
tons................	7,933	9,478	9,500	12,270

Exports: Not available.

U.S.A. Duties: 10 p.c. plus a 4 p.c. surcharge on specified quantities of chromium, molybdenum, tungsten, cobalt, nickel, vanadium and any other alloying metal. In addition, on chromium content over 0·2 p.c.—$1\frac{1}{2}$¢ lb.; on molybdenum over 0·2 p.c.—35¢ lb.; on tungsten over 0·2 p.c.—50¢ lb.; on vanadium over 0·1 p.c.—50¢ lb.

Bound Rates: B.P. bound at Free (GATT note);
M.F.N. bound at $12\frac{1}{2}$ p.c. to the United States (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Items Nos. 6(a); 7(a), (b); 10.

The basic steel producers recommended that this item be deleted. So-called "stainless" steels would then enter under proposed new plate and sheet items at rates of 10 p.c. B.P. and 15 p.c. M.F.N. The producers also requested that an alloy-surtax should apply unless ad valorem duties were as recommended.

Firth Brown Steels Ltd., steel merchandisers, objected to the proposed lumping together of stainless and heat resisting steels with carbon steels. Stainless and heat resisting steels, they said, have different properties and different size specifications from carbon steels. Their uses are different; thus, in most cases, there is no competition with carbon steels. This firm strongly felt that to avoid difficulties in Customs administration, a special item or items should be established for these steels. During the discussion at the public hearing and in subsequent investigation, it became apparent that no real agreement existed as to what constituted a rust, acid or heat resisting steel. Some said that any steel containing 11 p.c. or more of chromium qualified; others stated that any steel having 5 p.c. or more of chromium and/or of nickel would qualify (this definition is enforced by the Department of National Revenue). Still others have said that because of new developments the composition of such steels is subject to almost continuous change. For these reasons, no attempt has been made by the Board to define rust, acid or heat resisting steels, or to recommend a separate item for such steels.

A considerable number of steel users commented on the application of this item and the proposal of the steel makers. John Inglis Co. Limited proposed that 385a be deleted and that "special" steels (plates) be classified at the rates under 380(a) and (b), with the division between the two items at 48 inches, which is the maximum width rolled in Canada. A lower rate would apply to widths not rolled in Canada.

General Steel Wares stated that it uses about 340 tons of stainless steel annually in the manufacture of kitchenware. The proposed increase in duty would add substantially to its material costs. In particular, this firm urged that there be no increase in duty on types not made in Canada, such as stainless clad.

Tole Gaufree "Ideale" Enrg. informed the Board that it imports stainless steel under item 385a for the manufacture of cutlery. As a rule this firm purchases its steel requirements in Canada. From time to time, however, it wishes to purchase in quantities or sizes which are not of interest to Canadian mills and must import. This firm contended that it faces heavy competition from abroad. It stated that Canadian producers, must pay considerably more for materials and equipment, e.g., grinding wheels, colouring compound, cement, thinner, etc. because of substantial tariff protection on many of these products. At the present time, stainless steel for the manufacture of cutlery is subject to drawback of duty (item 1005) and this firm urged that it be permitted to enjoy this privilege. Several other cutlery manufacturers supported this case.

The British Iron and Steel Federation pointed out that the steel makers' proposal would eliminate the existing free entry on this item for British steel and impose a B.P. duty of 10 p.c. This would cut the margin of preference by 7½ p.c. The United Kingdom has developed markets in centres which are readily accessible to water transport, e.g., Montreal, Vancouver and the Maritimes. The implementation of the proposed rates would seriously injure this trade. In particular, the United Kingdom ships small tonnages of special alloy plate, known as cortens, which is a high strength low alloy plate. This type is also being produced in Canada in limited sizes. The Federation argued that the small tonnage imported from Britain supplemented domestic production. Small tonnages of stainless sheet and strip are also being imported from Britain, much of this apparently in sizes not produced domestically. It also urged that stainless and heat resisting steels be separately classified.

Kitchen Installations Limited informed the Board that it imported stainless steel from the United Kingdom for deep-drawing purposes. An increase in the B.P. rate would substantially increase costs and make it much more difficult to meet import competition on the finished products. In this regard, free entry for steel has placed this firm on a more equal footing, at least with respect to raw materials, with large scale United States producers of kitchenware.

EXISTING TARIFF ITEM 385b: STAINLESS STEEL

385b: Stainless steels in primary mill forms, of a class or kind not made in Canada, manufactured from Canadian made ingots, blooms or slabs imported by the Canadian manufacturers of such ingots, blooms or slabs for use in Canadian manufactures—(s.c. nil)

per ton	$5.00	$10.00	$20.00

This item was created in 1955.

Production: Nil, since the imported forms are of a class or kind not made in Canada.

Imports: Not previously recorded.

Exports: Nil.

Bound Rates: See below.

Alloy-surtax: See below.

Cross-reference: Recommended Item No. 12.

This is an unusual item. Created in 1955, its provisions are open to use by only one company—and that, one of the five basic producers.

Having excess capacity in its furnace department, Atlas Steels secured this concession in order to permit it to export (to rolling mills in the United States) stainless steels in primary forms—chiefly billets, slabs, etc.—to be rolled in the United States and imported in further processed forms—wide sheets, plate, etc.—by Atlas Steels. The item came into operation only on January 1, 1955, and as of the date of the public hearings on Reference No. 118 (chiefly in 1956) no details have been published by the Bureau of Statistics as to imports thereunder.

The five basic producers—one of whom is Atlas Steels—did not propose any change in this item. On the other hand, Atlas Steels raised vigorous objection to the practice of its only Canadian competitor in the production of specialty steels, Vanadium (Canada), which imports its raws in primary forms under item 377b (the note on which please see) free of duty and has a protection of 12½ p.c. M.F.N. on the finished bars or rods rolled from such duty-free ingots.

The precise margin situation re temporary item 385b would depend upon the parent item or items from which it was created in 1955.

EXISTING TARIFF ITEM 385c: SILICON FLATS

385c: Sheets or strip, of iron or steel, hot or cold rolled, not more than ·025 of an inch in thickness, containing not less than 2·90 per cent of silicon, coated or not, for use in the manufacture of electrical apparatus or parts of electrical apparatus—(s.c. nil)

Free	Free	12½ p.c.

This Order-in-Council item was created in 1955; revised (to put it on an AISI basis) a few months later, and again revised by Order-in-Council in 1956, at which time the present wording and rating were established.

Production: See general note re production of sheets and strip, under existing items 381 and 382. It is doubtful that there is much Canadian production in the high-silicon range covered by the item.

Imports: Not separately recorded.

Exports: Nil.

Bound Rates: There are no bound rates on the item as an item. The margin situation was no doubt considered when the item was created; in any event, the margin (or margins) which had existed, was wiped out.

Cross-reference: Recommended Item No. 7(g).

This item is one of three existing items in which the manufacturers of electrical and household appliances showed special interest: Item 386(k) being enamelling sheets; item 386(p), being low-silicon sheets, etc.; and item 385c, being high-silicon sheets or strip. This note should be read, therefore, along with the notes on existing items 386(k) and 386(p).

At the hearings, the industry generally pleaded for continuance of item 385c; perhaps the only concrete suggestion was that the silicon-content figure be reduced to 2·80 from 2·90, thus providing free entry for a somewhat enlarged range of flat forms.

EXISTING TARIFF ITEM 386: FLAT FORMS FOR SPECIFIED END-USES

386: Sheets, plates, hoop, band or strip, of iron or steel, as hereunder defined, under regulations prescribed by the Minister:—

The above is the heading only for what is probably the largest and most comprehensive end-use item in the entire Customs Tariff. It is, indeed, a whole series of end-use items grouped under the heading shown above—each sub-item bearing its own description and rating. Some of the sub-items, as will be seen hereafter, cover only *one* flat form of steel; others cover as many as are named in the main heading. Because of the structure of this rather unusual tariff item, it is not possible to show under the heading above a single set of statistics relative to production, imports, exports, etc.; these data will for the most part (and where ascertainable at all) be shown under the sub-item to which they appear most appropriately to attach.

Even under the above heading, however, this much of a general nature may be said:

Production: See the notes on the substantive tariff items relative to the various flat-forms (e.g.: where the word "plates" appears in a sub-item under 386, the relevant data re production of plate of *all* kinds will be found in the notes on existing tariff item 380. That is to say: item 380 and the note thereon, discuss (e.g.) *plates qua plates;* the sub-items of 386 and notes thereon discuss (e.g.) *plates qua use.*) General information re imports, exports, bound rates, etc. will (to the extent that it may be possible so to segregate and show it) be found in the note under each sub-item of item 386. Even though in some instances no suggestions or proposals for emendation were put forward by the applicant companies, such items are included in the information below, chiefly for the sake of maintaining intact the existing item structure.

Alloy-surtax: Does *not apply* to any of these sub-items.

Sub-item of Item 386:

(a) Plates, when imported by manufacturers for use exclusively in the manufacture or repair of the pressure parts of boilers, pulp digesters, steam accumulators and vessels for the refining of oil, in their own factories—(s.c. 5124)

per ton	Free	$5.00	$5.00

Production: See note on existing item 380.

Imports: In each of the years 1954 and 1955, the United States was by far the chief supplier: in 1954, 4,926 tons valued at $685,478; and in 1955, 6,536 tons valued at $852,038.

Exports: Probably none. See note on existing item 380 for general data re exports of plates.

Ad valorem equivalents: From the United States: in 1954, 3·5 p.c.; in 1955, 3·8 p.c.

Bound Rates: B.P. bound at Free (GATT note);
M.F.N. bound to the United States (Geneva).

Cross-reference: Recommended Item No. 6(a), (c).

In 1954 and again in 1955, the average value per ton of such plates imported from the U.S.A. and the United Kingdom was substantially above $100. Once the value of the steel rises above $100 per ton (i.e., five cents per pound) tariff item 385—with rates of Free, 12½ p.c. (GATT), 20 p.c.—comes into play. Obviously most of the plate referred to under tariff item 386(a) is worth more than five cents per pound—and whether imports are classified under item 386(a) or item 385 may depend upon the views of the Customs authorities as to which item has the greater specificity. They would regard 386(a) as being more specific and plate for the purposes named would be entered thereunder, utterly regardless of its value per pound or per ton.

It is understood, further, that the Customs authorities, in administering item 386(a), apply the qualifying words "*pressure parts of*" not only to boilers but also to the other structures named. The complete units—whether boilers, digesters, accumulators, etc.—probably are rated for the most part under item 428c at 15, 20, 30 p.c., or under items 427 or 446a at 22½ p.c.

(b) Sheets, plates, hoop, band or strip, cold rolled, when imported by manufacturers for use exclusively in the manufacture of butts, hinges, typewriters or sewing machines, in their own factories—(s.c. 5144)

Free	7½ p.c.	10 p.c.

It will be noted that this sub-item relates to cold-rolled steel, only. It was last revised in 1930.

Production: See general data on notes re such existing items as 380, 381, 382 and 383.

Imports: In 1954, 340 tons, valued at $57,743. Average value, about $170 per ton. All from the United States. In 1955, 412 tons, valued at $71,402, all from the United States.

Exports: Nil.

Bound Rates: No bound rates.

Cross-reference: Recommended Items Nos. 7(b), (e); 10.

The steel imported under this sub-item is chiefly strip. By far the largest users are the manufacturers of butts and hinges. These appear to buy their cold-rolled strip chiefly in Canada, but rely upon item 386(b) for certain requirements. All would oppose deletion of the item on the grounds that imports of butts and hinges are driving them out of business. No other users of this item were heard at the enquiry.

Butts and hinges are dutiable under item 430a at			
per cwt.	75 cts.	75 cts.	75 cts.
and	5 p.c.	20 p.c.	30 p.c.
Typewriters, under item 414 at			
	Free	20 p.c.	25 p.c.
Sewing machines, under item 415d at			
	5 p.c.	15 p.c.	25 p.c.

(c) Sheets, plates, hoop, band or strip, hot rolled, being mould boards, shares, cultivator or shoe shapes, plough plates, land sides or disc circles, when such rectangles, circles or sketches are cut to shape but not moulded, punched, polished or otherwise manufactured, when imported by manufacturers of agricultural implements for use exclusively in the manufacture of agricultural implements in their own factories—(s.c. 5142)

Free Free Free

This sub-item was last revised in 1939. Just why it has remained in the Tariff to date is difficult to state; everything classifiable under its wording would enter free of duty under item 442, et seq.

Imports: These still persist. They were in 1954, 287 tons valued at $72,246, all from the United States. In 1955, 1,563 tons valued at $440,838, all from the United States.

Exports: Not available, if any.

Production: Not available, if any.

Bound Rates: B.P. bound under GATT note;
M.F.N. bound to the United States (Geneva).

In light of item 442, there is no purpose to be served by the retention of this sub-item.

(d) Sheets, hoop, band or strip, coated or not, polished or not, when imported by manufacturers of saddlery hardware and saddles for use exclusively in the manufacture of such articles, in their own factories—(s.c. 5145)

Free Free Free

The imports under this sub-item in 1954 indicate its obsolescence: a portion only of a total of 12 tons, valued at $4,720, all from the United States.

Production: Not available.

Exports: Not available.

Bound Rates: B.P. bound under GATT note;
M.F.N. bound to the United States (Torquay).

Harness is dutiable under item 612 at rates of 15 p.c., 20 p.c., 30 p.c.; saddles, under item 612a at rates of 10 p.c., 25 p.c., 30 p.c.

Cross-reference: Recommended Item No. 7.

Obviously, this sub-item does not warrant continuance.

(e) Sheets, hoop, band or strip, hot or cold rolled, when imported by manufacturers of shovels for use exclusively in the manufacture of shovels, in their own factories—(s.c. 5076)

per ton Free $2.75 $3.00

Production: See notes on substantive items.

Imports: None in either 1954 or 1955.

Exports: Nil.

Bound Rates: No bound rates.

No processing industry made serious representations urging continuance of this item. One (General Steel Wares) stated that cancellation of the item might mean increased prices on some 100 tons used annually by the company in the production of shovels.

Cross-reference: Recommended Item No. 7.

Shovels enter under item 431 at 10 p.c., 15 p.c., 20 p.c.

(f) Hoop, band or strip, hot or cold rolled or drawn, coated or not, when imported by manufacturers of mats for use exclusively in the manufacture of mats, in their own factories—(s.c. 5117)

Free	5 p.c.	5 p.c.

This sub-item was last revised in 1931. Its relative importance as of today is perhaps best illustrated by:

Imports: In 1954, 33 tons worth $4,800, all from the United States. In 1955, 17 tons worth $2,500. The average value per ton in 1954 was about $140.

Bound Rates: No rates bound.

Cross-reference: Recommended Item No. 7.

Mats, if wholly or in chief part of steel, would be dutiable under item 446a at 10 p.c., 22½ p.c., 35 p.c.

(g) Sheets, plates, hoop, band or strip, not tempered or ground nor further manufactured than cut to shape, without indented edges, when imported by manufacturers of saws or straw cutters for use exclusively in the manufacture of saws or straw cutters, in their own factories—(s.c. 5147)

Free	Free	Free

GATT

Sheets, plates, hoop, band or strip, not tempered or ground nor further manufactured than cut to shape, without indented edges, when imported for use exclusively in the manufacture of saws or straw cutters

Free

(h) Sheets, plates, hoop, band or strip, hardened, tempered or ground, not further manufactured than cut to shape, without indented edges, when imported by manufacturers of saws for use exclusively in the manufacture of saws, in their own factories—(s.c. 5146)

Free	10 p.c.	12½ p.c.

GATT

Sheets, plates, hoop, band or strip, hardened, tempered or ground, not further manufactured than cut to shape, without indented edges, when imported for use exclusively in the manufacture of saws

7½ p.c.

Since these two sub-items (g) and (h) cover saw-steel, it is desirable that they be covered under one note.

Item 386(g)—by means of an "ex item" which is broader in terms than the statutory item—was bound under the B.P. tariff (GATT note); and under the M.F.N. tariff to Benelux and Sweden (Annecy and Torquay).

Item 386(h) was, in the same manner, bound under the B.P. tariff (GATT note) and to the United States and Sweden (Annecy and Torquay).

Production: No saw-steel is made in Canada by any mill; moreover, saw-steel is not made in the United States by any of the basic steel mills, but is produced entirely by specialty mills—owing to the extremely wide range of formulae and specifications laid down by the saw manufacturers.

Imports: Item 386(g): in 1954, 890 tons from the United States, valued at $640,711; and from Sweden, 35 tons valued at $29,000. Corresponding figures for 1955 are: 1,530 tons, valued at $1,186,057 from the United States; and 61 tons, valued at $50,549 from Sweden. In most years, the United Kingdom ranks as either second or third supplier, by tonnage.

Item 386(h): in 1954, 102 tons, valued at $114,416 from the United States; and from Sweden, 60 tons valued at $70,200. Corresponding figures for 1955 are: 141 tons valued at $168,463 from the United States; and from Sweden, 65 tons valued at $75,683.

It will be noted that in 1954, the non-tempered steel from the United States was worth more than $700 per ton and that from Sweden more than $800 per ton. In the same year, the tempered steel (item 386(h)) from the United States was worth more than $1,000 per ton and that from Sweden even more. In the same year, the steel from the United Kingdom, in both grades, was valued somewhat below the corresponding products from the United States and Sweden.

Exports: Nil.

Bound Rates: Item 386(g)—(ex) see detail in opening paragraphs above.
Item 386(h)—(ex) " " " " " "

It was stated at the public hearing that about half of the total tonnage imported into Canada under the two sub-items is in the form of plate; the remainder, sheet or strip. This steel is used in Canada to produce circular drag, gang, hack, hand and band saws; web saws, straw knives and blades for pulpwood saws.

The Canadian basic steel producers would not object to retention in the Tariff of these two end-use sub-items. The saw manufacturers would prefer to see *both* items on the free list.

Straw knives and straw cutters enter duty free (chiefly under item 409f). Saws are dutiable under various tariff items:

chiefly item 431b at	10 p.c.	22½ p.c.	35 p.c.
but also item 411 at	10 p.c.	15 p.c.	20 p.c.
and item 411a at	10 p.c.	12½ p.c.	20 p.c.

Cross-reference: Recommended Item No. 8(a), (b).

(i) Sheets, hoop, band or strip, when imported by manufacturers for use exclusively in the manufacture of buckle clasps, bedfasts, furniture casters, corset steels, clock springs, shoe shanks, phonograph motor springs or ball bearings, in their own factories—(s.c. 5143)

Free Free 5 p.c.

Production: See general notes under items 380, 381, 382 and 383.

Imports: In 1954, 541 tons valued at $132,630 from the United States, and 70 tons valued at $14,700 from the United Kingdom. Corresponding figures for 1955 are: 694 tons valued at $158,837 from the United States; and 123 tons valued at $22,971 from the United Kingdom.

Exports: Not ascertainable, if any.

Bound Rates: No rates are bound.

Cross-reference: Recommended Item No. 7.

At the public hearings, the Canadian processors from whom the Board heard were those interested in making ball-bearings and races for either ball- or roller-bearings. These manufacturers said that, although they purchased all the steel they could get in Canada, they were forced to go abroad for some—particularly a specialty strip, from 4 inches to 6-3/16 inches in width.

Rates on some of the finished products made from imports under item 386(i) are:

Buckle clasps:	Item 351	at	15 p.c.	22½ p.c.	30 p.c.
Corset steels:	" 451c	"	15 p.c.	27½ p.c.	30 p.c.
Casters:	" 446a	"	10 p.c.	22½ p.c.	35 p.c.
Shoe shanks:	" 446a	"	10 p.c.	22½ p.c.	35 p.c.
Phono springs:	" 445o	"	Free	Free	Free
Bedfasts:	" 519	"	15 p.c.	25 p.c.	45 p.c.
Ball-bearings:	" 427b	"	Free for Farm Implements		
	and 427b	"	Free	Free	35 p.c. if for other uses and not of a class made in Canada.
	and 427b	"	Free	17½ p.c.	35 p.c. if for other uses and of a class made in Canada.

(j) Hoop, band or strip, being tagging metal, coated or not, when imported by manufacturers of shoe and corset laces for use exclusively in the manufacture of shoe and corset laces, in their own factories—(s.c. 5119)

Free Free 5 p.c.

This item was last revised in 1930.

There have been no imports thereunder for some years. No precise data available re production or exports (see general notes preceding). No bound rates. Probably quite obsolete. No representations made at hearings.

Cross-reference: Recommended Item No. 7.

(k) Sheets, hot or cold rolled, when imported by manufacturers of hollow-ware coated with vitreous enamel or of apparatus designed for cooking or for heating buildings, for use exclusively in the manufacture of hollow-ware coated with vitreous enamel or of vitreous-enamelled sheets for apparatus designed for cooking or for heating buildings—(s.c. 5129)

Free 10 p.c. 12½ p.c.

This item was last revised in 1935.

Production: See general notes, particularly re existing tariff items 381 and 382 and 383 re sheet and strip of all kinds.

Imports: In 1954, from the United States, 5,300 tons valued at $667,000; from the United Kingdom, 350 tons valued at $46,000. Corresponding figures for 1955 are: from the United States, 7,902 tons valued at $1,105,903; from the United Kingdom, 1,390 tons valued at $239,955.

Bound Rates: B.P. bound under GATT note (Geneva);
M.F.N. bound to U.S.A. (Geneva).

Cross-reference: Recommended Item No. 7(a), (b).

This item was much discussed at the public hearings and strenuous objection to the proposal that it be deleted was voiced by several industries, notably the manufacturers of stoves, refrigerators and hollow-ware. It was stated as a general proposition that the industries represented by spokesmen at the hearings consistently had to import roughly two-thirds of their total requirements of

flat steels (including not only the stock for vitreous enamelling but such others as blue-polished, terneplate, etc.). This was, they said, due to the fact that the Canadian basic producers simply could not supply the entire demand. This latter was growing, on the whole; in vitreous-enamelling in particular (under this sub-item) the demand was trending downward in re hollow-ware but markedly upward in stoves, refrigerators and other appliances.

Duties on finished products are:

Stoves:	Item 443	at	15 p.c.	$22\frac{1}{2}$ p.c.	30 p.c.
Hollow-ware:	" 432b	"	$17\frac{1}{2}$ p.c.	$22\frac{1}{2}$ p.c.	35 p.c.
Refrigerators:	" 415a	"	$17\frac{1}{2}$ p.c.	20 p.c.	40 p.c.
Washers:	" 415b	"	15 p.c.	$22\frac{1}{2}$ p.c.	35 p.c.
Bathtubs, etc.:	" 433	"	5 p.c.	20 p.c.	35 p.c.

At the hearing, it was suggested by one manufacturer of enamelled appliances that (1) sub-item 386(k) be retained at its present M.F.N. rate of 10 p.c.; (2) that it be enlarged in terms to cover "parts"; (3) that it cover also "any electrical apparatus using (comprising?) enamelled sheet or strip". By another manufacturer a plea was made for retention of the sub-item, partly because it permits importation from the United States (and perhaps from the United Kingdom, if sought) of so-called "Armco Iron"—sheets of premium enamelling quality, worth about $150–160 per ton. The United Kingdom representative, summing up re all the sub-items in 386, named sub-item (k) as one that he would hope and desire to see maintained.

(l) Sheets, cold rolled, blue polished, when imported by manufacturers of apparatus designed for cooking or for heating buildings, for use exclusively in the manufacture of apparatus designed for cooking or for heating buildings, in their own factories—(s.c. 5130)

Free   10 p.c. $12\frac{1}{2}$ p.c.

This item was last revised in 1930.

Production: See general notes under items 381, 382 and 383.

Imports: In 1954, 60 tons valued at $6,800 all from the United States. Corresponding figures for 1955 were 6 tons valued at $1,309 from the United States. The United Kingdom sent some 200 tons, valued at $27,000, in 1953, but was not a supplier in either 1952 or 1954. The average value from the United States in 1954 was $145 per ton.

Exports: Nil.

Bound Rates: No rates bound.

Cross-reference: Recommended Item No. 7(b).

The note re this sub-item might well be a repetition, word by word, of that on the immediately preceding sub-item (k). In the latter, special reference was made to the growing use of enamelled sheets in stoves and refrigerators. As regards the closely-related blue-polished product, it is doubtful that the use is expanding; imports are small, and domestic production not large. The appliance manufacturers, of course, would like to see this sub-item maintained.

(m)(i) Sheets of iron or steel, cold rolled, when imported by manufacturers for use exclusively in the manufacture of sheets coated with tin—(s.c. 5128)

Free   15 p.c.   15 p.c.

This item was last revised in 1932, at which time the making of tinplate in Canada was barely begun, and when the United Kingdom became the chief supplier under the wide margin provided at that time.

Production: See note on existing item 383(a) and (b).

Imports: The statistical classification 5128 above referred to covers not only sub-item 386(m)(i) cold-rolled sheets for tinning, but also item 386b, an Order-in-Council item created in 1941, providing for the free entry of either hot- or cold-rolled sheets, in coils, for tinning.

Items 386(m)(i) and 386b: in 1954, 120 tons valued at $11,000, all from the United States, almost all of it free of duty under the Order-in-Council provision. In 1953, about 120 tons had been imported from Benelux and 356 tons from the United States. The import picture for 1955 was as follows: 55 tons from the United States valued at $4,309.

Exports: See note under existing item 383(a) and (b).

Bound Rates: The B.P. rate on sub-item 386(m)(i) was bound by GATT note (Geneva). The M.F.N. rate was bound to Benelux (Geneva). The rates on the Order-in-Council item 386b are not bound.

Cross-reference: Recommended Item No. 7(b).

The importance of this sub-item is dubious. In Canada, tinplate is made by the basic steel group and, unless by reason of scarcity of base-stock, is produced from their own production of hot-rolled or cold-rolled sheets. The bulk of the tinplate now made is on cold-rolled base; and that there were in 1954 or 1955 any imports of base-stock—whether hot- or cold-rolled—is not easy of explanation.

(m)(ii) Sheets, hoop, band or strip, of iron or steel, hot rolled, when imported by manufacturers for use exclusively in the manufacture of sheets, hoop, band or strip, coated with zinc or other metal or metals, not including tin, in their own factories—(s.c. 5141)

5 p.c.	$17\frac{1}{2}$ p.c.	20 p.c.

This item was last revised in 1932, and the M.F.N. rate was reduced from 20 p.c. to $17\frac{1}{2}$ p.c. at Geneva.

Production: See general notes on existing item 383(a) and (b).

Imports: There have been no imports under this sub-item since 1952, in which year they were negligible. Indeed, there have been practically no imports since the end of World War II. Imports were of some consequence in the '30's, when certain United Kingdom interests maintained a galvanizing plant in Canada, the base-stock for which they supplied under this item. The United Kingdom interest in Canadian production of galvanized sheet and strip no longer exists, and the Canadian producers of galvanized flats (chiefly the basic group or affiliates) manufacture their own base-stock.

Bound Rates: B.P. bound under GATT note (Geneva);
M.F.N. bound to the United States (Geneva).

Cross-reference: Recommended Items Nos. 7(a); 10.

(n) Hoop, band or strip, hot rolled, in coils not less than 100 feet in length, when imported by manufacturers for use exclusively in the manufacture of cold rolled iron or steel, in their own factories—(s.c. 5116)

Free	5 p.c.	5 p.c.

This item was last revised in 1931.

Production: See notes under existing item 383(a) and (b).

Imports: In 1954, about 150 tons valued at $17,700, all from the United States. In 1952, imports had been as high as 2,500 tons, valued at nearly $250,000—again almost entirely from the United States.

Exports: See notes on existing item 383(a) and (b).

Bound Rates: There are no bound rates.

Cross-reference: Recommended Items Nos. 7(a); 10.

The progressive decline in imports of hot-rolled strip in coils for processing into cold-rolled steel reflects the fact that, more and more, Canadian production of cold-rolled strip is from the domestically-manufactured hot-rolled form.

At the public hearings, Canadian manufacturers of skates stated that they use sub-item 386(n) to import their base-stock from the United States. This was stated to be high-carbon, high-manganese steel, which Canadian producers (they continued) had not been able to supply until very recently. This the basic group declared not to be the case, since they had been supplying high-carbon high-manganese strip to various cold-rollers, if not to the skate manufacturers.

In connection with this sub-item, see the note re existing Drawback Item 1015.

(o) Hoop, band or strip, cold rolled, electrogalvanized, six inches or less in width, in coils of not less than 100 feet, when imported by manufacturers for use exclusively in the manufacture of rolling doors of steel, in their own factories—(s.c. 5118)

Free	$7\frac{1}{2}$ p.c.	$7\frac{1}{2}$ p.c.

This item was last revised in 1931.

Production: See general notes on sheet and strip, existing items 382 and 383.

Imports: In 1954, 140 tons valued at $26,000, entirely from the United Kingdom. In 1952 and 1953, both the United Kingdom and the United States were suppliers, but the total imports have never been great. The 1955 import-picture was: 130 tons valued at $29,130 from the United Kingdom and 27 tons valued at $4,548 from the United States.

Exports: Nil.

Bound Rates: No rates are bound.

Cross-reference: Recommended Items Nos. 7(d); 10.

The United Kingdom representatives have expressed a particular interest in continuing trade with Canada in *electrolytically-galvanized* strip under this sub-item (even though the actual tonnage is small) and under the main coated items, such as item 383(q.v.). Certain Canadian users of galvanized sheets disputed the value of the word "electrolytically" and suggested that it be deleted from these items.

(p) Sheets or strip, of iron or steel, hot or cold rolled, with silicon content of ·075 per centum or more, when imported by manufacturers of electrical apparatus or of parts therefor, for use in the manufacture of electrical apparatus or of parts therefor, in their own factories—(s.c. 5131)

Free	$12\frac{1}{2}$ p.c.	$12\frac{1}{2}$ p.c.

This item was last revised in 1951.

Production: See general notes under existing items 382 and 383.

Imports: In 1954, 18,800 tons from the United States, valued at close upon $5,000,000. Small amounts from the United Kingdom. The chief supplier in each year is the United States. In 1955, 22,604 tons valued at $6,739,776 and from the United Kingdom 116 tons valued at $20,835.

Exports: Nil.

Bound Rates: B.P. bound under GATT note (Geneva);
M.F.N. bound to the United States (Geneva) except as regards "parts" and "strip".

Cross-reference: Recommended Items Nos. 7(a), (b); 10.

This sub-item should be considered in relation to an Order-in-Council item numbered 385c, due to expire December 31, 1957. This latter was created to meet the request of certain manufacturers of electrical goods—in some cases, the same firms as import under sub-item 386(p) for use in the manufacture of such products as ignition coils, transformers, rotating units, etc. It was made quite clear at the public hearing that sheet or strip of not more than ·025 inch in thickness (or even ·075, for that matter) and containing not less than 2·9 p.c. of silicon is not made in Canada. The basic group apparently would not object to continuance in effect of item 385c (no import data for which are recorded), suggestions for the emendation of which included requests for a change from 2·9 to 2·8 silicon and for the insertion of "coated or not".

(q) Hoop steel, hot or cold rolled, plain or coated, ·064 inch or less in thickness, not more than three inches in width, when imported by manufacturers of barrels or kegs or by manufacturers of flat hoops for barrels and kegs, for use exclusively in their own factories—(s.c. 5120)

Free	$12\frac{1}{2}$ p.c.	$12\frac{1}{2}$ p.c.

This item was created in 1932 in its present form. There is another item providing steel for cooperage hoops, viz.: item 384a, with rates of Free, Free and $12\frac{1}{2}$ p.c., but for which data re imports are not available.

Production: See general notes re items 382 and 383.

Imports: Under item 386(q), these amounted in 1954 to about 835 tons, valued at $130,000 and virtually all from the United States. The corresponding figures for 1955 are: 935 tons, valued at $153,439 from the United States and 59 tons, valued at $7,236 from the United Kingdom.

Exports: Nil.

Bound Rates: B.P. bound under GATT note (Geneva);
M.F.N. bound to Benelux (Geneva).

Cross-reference: Recommended Item No. 10.

Order-in-Council item 384a appears to be the operative rate today and probably explains the fact that nearly all the $130,000 worth of imports from the United States in 1954 were admitted duty free (although attributed statistically to the duty-bearing item). At the hearings, the cooperage industry declared that, for its purposes, there is no such thing as "cold-rolled" hoop; that no hot-rolled hoop for cooperage purposes is made in Canada, since none of it has the essential rolled or mill-edge. At the hearings, the cooperage industry, while opposing the proposal of the basic group that the two existing items be cancelled, proposed as a substitute for both a new wording:

> "Strip steel, hot-rolled, with rolled or mill edge, plain or coated, ·0972 inch or less in thickness, not more than three inches in width", etc. (for hoops for barrels and kegs) with rates of Free, Free and $12\frac{1}{2}$ p.c.

(r) Sheets or strip, cold rolled, when imported by manufacturers of pipes and tubes for use exclusively in the manufacture of pipes and tubes in their own factories, under regulations prescribed by the Minister—(s.c. 5148)

Free	5 p.c.	5 p.c.

This item was last revised in 1935. It provides for the material named therein; rates of duty corresponding to the other basic raw material of the pipe manufacturer—skelp.

Production: See general notes on existing items 381 and 382, re the production in Canada of sheet and strip, both hot-rolled and cold-rolled.

Imports: In 1954, 10,000 tons, valued at $1,096,000, entirely from the United States. In the two preceding years, total tonnage imported was about the same as in 1954, but in 1953, Benelux and the United Kingdom were represented by several hundred tons each. The 1955 imports were: 12,265 tons, valued at $1,504,896 from the United States and 66 tons, valued at $8,438 from the United Kingdom.

Exports: Nil.

Bound Rates: No rates are bound.

Cross-reference: Recommended Item No. 11.

This is an extremely important item. At the hearings, most of the discussion regarding the proposal of the basic producers that sub-item 386(r) be cancelled came about under the discussion of the skelp item (384). To the extent that item 386(r) was the subject of separate debate, the general attitude of the pipe and tube makers was that the entry at not more than 5 p.c. of the cold-rolled flat sheets should be continued.

(See the notes on existing item 384 (skelp) for more detailed information relative to both items.)

(s) Strip, of iron or steel, cold rolled, tempered or not, electro-galvanized, $2\frac{1}{4}$ inches or less in width, ·080 inch or less in thickness, in coils of not less than 100 feet, for use in the manufacture of metal belting or flexible metal hose

	Free	$7\frac{1}{2}$ p.c.	20 p.c.

Cross-reference: Recommended Items Nos. 7(d); 10.

There are no precise data re production, imports or exports. As this item was created by Order-in-Council in 1955, it is difficult to tell what the position was as regards either bound rates or margins.

(t) Welded strip steel not tempered, nor further manufactured than cut to shape and beading removed, without indented edges, for use in the manufacture of saw blades

	Free	Free	Free

See note on item 386(g).

(u) Hoop, band or strip, of steel of Bessemer quality, when imported by manufacturers of hinges, for use exclusively in the manufacture of hinges, in their own factories—(s.c. 5153)

per ton	Free	$4.00	$8.00

This item was last revised in 1952.

Production: See general notes on existing items 381, 382 and 383.

Imports: In 1954, 285 tons, valued at $21,000 of which 175 tons, valued at $12,000 came from the United States and the remainder from Belgium. In 1955, 515 tons, valued at $31,306 entered from the United States and 50 tons, valued at $4,890 from Belgium.

Exports: Nil.

Bound Rates: Bound as (then) item 815.

Cross-reference: Recommended Item No. 7(f).

The makers of butts and hinges pleaded at the public hearings for continuance of item 386(u)—even though one at least of them said that he used no Bessemer steel and knew of no one else using it.

EXISTING TARIFF ITEM 386b: FLATS FOR TINNING

386b: Sheet and strip of iron or steel, hot rolled, in coils or otherwise, when imported by manufacturers to be cold rolled or cold reduced and used exclusively in the manufacture of sheets or strip coated with tin—(s.c. 5128)

Free	Free	—

This item, an Order-in-Council provision, was last revised in 1941.

Production: See general notes on production in Canada of hot-rolled and cold-rolled sheet or strip of all kinds, under existing tariff items 381 and 382.

Imports: Although item 386b refers only to hot-rolled flat forms for coating with tin, the statistical classification relating thereto (s.c. 5128) covers both hot-rolled and cold-rolled sheets. There were thereunder no imports whatever in 1952; in 1953, imports were valued at $58,000, chiefly from the United States; in 1954, these had dropped in total value to $11,000, entirely from that country. Imports under this statistical classification in 1955 were: 55 tons, valued at $4,309, again entirely from the United States.

Exports: Nil.

Bound Rates: There are no bound rates.

Alloy-surtax: Does not apply to present item.

Cross-reference: Recommended Item No. 7(a).

Such tinning of sheets as is done in Canada is done entirely by those of the basic producers who roll the base-stock, sheet and strip. Presumably, any imports have been by these firms. By far the greater part of the finished tinplate used in Canada is produced in this country—under tariff protection of 15 p.c., 15 p.c. and 20 p.c.—and there would seem to be no great reason for the continuance in effect of item 386b.

EXISTING TARIFF ITEM 386e: TERNE SHEETS

386e: Sheets of iron or steel, coated with an alloy of lead and tin, for use in Canadian manufactures—(s.c. 5157)

Free	5 p.c.	15 p.c.

This Order-in-Council item was last revised in 1941.

Production: Terneplate is not produced in Canada, whether of the so-called "long" type or the so-called "manufacturing" type.

Imports: In 1953, valued at $1,463,000, almost entirely from the United States; in 1954, $880,000, entirely from the United States; in 1955, $1,379,000, again entirely from the United States.

Exports: Nil.

Bound Rates: There are no bound rates.

Alloy-surtax: Does not apply to present item.

Cross-reference: Recommended Item No. 9.

Terneplate, not produced in Canada, is regarded by the basic producers as being *for certain uses* substitutable by tinplate. The same basic producers admit that deep-drawing terneplate—especially for certain automotive applications—has no substitute and for that reason they did not seek revision of Drawback Items 1045 and 1045a in so far as these relate to the "long terne". That is to say, if, as they request, the existing item 386e were deleted and all terneplate fell under their proposed sheet and strip item (at much higher rates) they would not

object if the existing drawback provisions were to remain in force. Contrariwise, certain secondary industries using terneplate for purposes other than are covered by the drawback items would prefer to see the item (386e) re *terneplate* of all kinds remain in the Tariff and at an M.F.N. rate not exceeding 5 p.c.—but, preferably, Free. One prominent user stated that he had been unable to secure a United Kingdom source of terneplate—although the trade statistics reveal very small imports from the United Kingdom in 1952 and 1953.

In connection with this item, please see the note re Drawback Items 1045 and 1045a.

EXISTING TARIFF ITEM 387: RAILWAY RAILS

387: Railway rails, of iron or steel, of any weight, or for any purpose, punched, drilled or not, n.o.p.—(s.c. 5078)

per ton	\$4.50	\$6.00	\$7.00

Production: Shows fairly substantial fluctuations, which are only slightly related to imports. The following figures show tons of output:

1937	1951	1953	1954	1955
86,932	257,244	303,318	241,922	228,991

Imports: Have been relatively small, amounting to from 1·5 to 7·0 p.c. of domestic supply. Imports from the two chief suppliers, and totals from all sources, are shown below in tons:

	1937	1951	1953	1954	1955
U.K......	—	4,398	877	8,429	12,910
U.S.......	10,105	5,447	8,136	5,230	7,490
Total....	11,095	11,977	9,890	14,493	21,274

Exports: Sales of Canadian rails abroad have varied greatly in volume from one year to another. In large part this is probably accounted for by the fact that foreign orders are sought only during periods when domestic business tends to fall off.

Ad valorem equivalents of the specific duties are:

1. Based on the average price of \$85 per ton for imports from the United Kingdom in 1955, the B.P. rate = 5·3 p.c.
2. Based on the average price of \$74 per ton for imports from the United States in 1955, the M.F.N. rate = 8·1 p.c.

U.S.A. Duty: \$1.00 per ton.

Bound Rates: No rates bound under this item.

Alloy-surtax: Does not apply.

Cross-reference: Recommended Item No. 13(a).

The basic steel producers recommended that this item be deleted and replaced by a new item to cover all rails of iron or steel, with rates of 10 p.c., 12½ p.c. and 20 p.c. The new item would thus encompass imports under existing items 387, 387c and those rails which now enter under 388g and are not further manufactured than hot-rolled, curved and punched or drilled. In supporting this proposal, the producers stated that relatively high freight costs made it difficult for them to compete in certain coastal areas with British rails; if the tonnage of rails imported into British Columbia in 1954-55 had been placed with Canadian mills, it would have enabled Dosco and Algoma to have operated their rail mills for several extra weeks in 1954 when domestic rail orders were smaller than normal.

While this proposal was not opposed by the Canadian railways, representatives of British rail exporters stated at public hearings that the suggested rates would seriously injure their trade which, even at present, is confined to certain areas where smaller rail-users can benefit by ocean freight.

EXISTING TARIFF ITEM 387a: TIES, FISH-PLATES, ETC.

387a: Railway ties, fish-plates, splice bars, rail joints, tie-plates, of iron or steel—(s.c. 5704)

per ton	$5.00	$7.00	$8.00

Production: Canadian output supplies the great bulk of demand; production in tons is shown below:

1951	1953	1954	1955
86,243	65,120	52,561	82,438

Imports: These have been small:

	1951	1953	1954	1955
U.K. . . . . tons	1,100	837	2,622	2,115
U.S.A. . . . . tons	2,544	8,126	2,100	2,574
Total . . . . tons	3,729	8,998	4,758	4,728

Exports: No statistics available.

Ad valorem equivalents: Based on imports in 1955 from the United Kingdom, the B.P. rate = 4·5 p.c. Based on imports in 1955 from the United States, the M.F.N. rate = 5·8 p.c.

U.S.A. Duty: $2.80 per ton.

Bound Rates: Rates are not bound.

Alloy-surtax: Does not apply.

Cross-reference: Recommended Item No. 13(b).

The basic steel producers recommended that the wording of this item be revised and that the rates be increased to 10 p.c., 15 p.c. and 20 p.c. The main change in wording is the deletion of "ties" of steel, which are not made or used in Canada. No user of the products described in this item made representations. The British Iron and Steel Federation stated that its members shipped some of these products to coastal regions of Canada. Although the trade is not large in relation to Canadian output, they valued it and felt that the proposed rates would be injurious to themselves and the users of their products.

EXISTING TARIFF ITEM 387c: GROOVED RAILS

387c: Steel grooved (or girder) rails for electric tramway use, weighing not less than 75 pounds per lineal yard, punched, drilled, or not, of shapes and lengths not made in Canada—(s.c. 5079)

per ton	Free	$7.00	$7.00

Production: No Canadian mill now produces girder rails for tramway use.

Imports: Tonnages imported are small and will continue to decline. In 1955, 510 tons were imported, entirely from the United States.

Exports: Nil.

Ad valorem equivalent: Based on $108 per ton, the average value of imports in 1955, the M.F.N. rate = 7·4 p.c.

U.S.A. Duty: $1.00 per ton.

Bound Rates: B.P. bound Free (GATT note);
M.F.N. bound at $7.00 per ton to Benelux (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Item No. 13(a).

The basic steel producers recommended that this item be deleted as obsolete. There was no opposition to this proposal.

EXISTING TARIFF ITEM 388: ANGLES, BEAMS, ETC.

388: Iron or steel angles, beams, channels, columns, girders, joists, tees, zees and other shapes or sections, not punched, drilled or further manufactured than hot rolled, weighing not less than 35 pounds per lineal yard, n.o.p.; piling of iron or steel, not punched or drilled, weighing not less than 35 pounds per lineal yard, including interlocking sections, if any, used therewith, n.o.p.—(s.c. 5161)

per ton	Free	$3.00	$3.00

This item was established in 1930, and revised in 1935 to the existing wording and rates of duty.

Production: Tonnages of heavy structurals produced are:

	1951	1952	1953	1954	1955
tons..........	156,678	136,001	186,249	119,399	164,906

Imports: Under this item imports have been very substantial, usually exceeding domestic production by a wide margin:

	1951	1952	1953	1954	1955
U.K.......... tons	19,338	10,234	5,463	11,126	5,481
U.S.A......... tons	137,113	109,023	153,791	213,079	198,170
Belgium...... tons	42,482	38,285	24,011	11,835	20,161
Total......... tons	203,836	159,881	187,259	249,299	233,457

Exports: For all types of structurals:

	1937	1950	1952	1954
tons.........	1,426	2,191	6,562	987

Ad valorem equivalent: In 1955 the ad valorem equivalent based on imports from the United States was 2·5 p.c.

U.S.A. Duty: $2.00 per ton plus surcharges if the metal is alloyed.

Bound Rates: B.P. bound at Free (GATT note);
M.F.N. bound at $3.00 per ton to United States (Geneva)

Alloy-surtax: Does not apply.

Cross-reference: Recommended Item No. 4(a), (b), (c).

This is the one form of steel where domestic production has not gained a larger proportion of the market in recent years, as illustrated by the following figures for heavy structurals:

	Canadian Production	Imports	Imports as p.c. of Production
1951........tons	156,678	221,124	141·1
1952........tons	136,001	174,271	128·1
1953........tons	186,249	202,733	108·8
1954........tons	119,399	257,899	216·8
1955........tons	164,906	244,547	148·8

To a considerable extent these very substantial tonnages of imports no doubt consist of wide-flange beams. This type of beam has a number of advantages in structural work and is in heavy demand. With the exception of one size of modified wide-flange beams, such beams are not produced in Canada. The statistical breakdown for 1955 by the Dominion Bureau of Statistics indicates that approximately 60 p.c. of total imports of structural steels was in the form of wide-flange beams:

Wide-flange beams, 8″ and over.............	165,569 tons
Wide-flange beams, under 8″................	6,879 tons
Sheet piling..............................	9,373 tons
All other.................................	99,655 tons

It will be noted that in 1954, a poor year for steel sales, imports of heavy structurals increased. No doubt this was largely due to the fact that in preceding years steel was in fairly tight supply and users were forced in many instances to use standard shapes. In 1954, however, when demand for steel fell sharply, buyers were free to purchase in a more discriminating manner. This factor, coupled with adverse freight differentials to markets, resulted in a very sharp contraction in domestic output.

The possibility of a wide-flange mill being constructed in Canada was discussed at the hearings. The basic producers themselves stated that such a mill would have a capacity to produce 50,000 tons per month. It could therefore supply the entire Canadian demand in three or four months of operation and since this type of mill costs $70 or $80 million, it would not be reasonable to have one in Canada. Some consideration might be given, nevertheless, to the construction of a modified wide-flange mill at a much smaller capital outlay.

The basic steel producers recommended that this item be deleted from the Tariff. They stated that the existing breakdown in the Tariff is now completely obsolete. They therefore proposed that two new structural items be established, the first with rates of 10 p.c., 15 p.c. and 20 p.c. and the second for sizes not made in Canada with rates of Free, 7½ p.c. and 20 p.c.

John Inglis Co. Limited opposed this recommended increase in duties on the grounds that it would increase structural costs unreasonably. The spokesman for this company stated that they must face keen import competition on many of their finished products, which are protected by rates ranging from 3 to 22½ p.c.

The British Iron and Steel Federation stated that its members exported structural steel under item 388 and that this was the most important item in this field for them. The Federation contended that imports from Britain complemented Canada's production by supplying many sizes and shapes not made here. Furthermore, imports from Britain have been a small percentage of Canadian output. Because of transportation costs, the bulk of British structurals is used only where there is ready access to ocean shipping, e.g., Montreal, Vancouver and the Maritime Provinces.

Sir Robert McAlpine and Sons (Canada) Limited made representations on sheet piling, stating that it had certain advantages in supplying this product to Quebec and the Maritimes. The only Canadian supplier is Algoma which is somewhat removed from these points. British piling moves even into the Toronto area. Any increase in duty might better the competitive position of Algoma in marginal areas but in Eastern and Western Canada it would simply apply as a revenue duty and, hence, a burden on the consumer.

The Canadian Institute of Steel Construction (Inc.) stated that a number of sizes and shapes are not rolled in Canada; provision at reduced rates should be made for the importation of such steels.

EXISTING TARIFF ITEM 388a: SHAPES AND SECTIONS

388a: Iron or steel shapes or sections, as hereunder defined, not punched, drilled or further manufactured than hot rolled, weighing not less than 35 pounds per lineal yard, viz.: I-beams, up to and including 6 inches in depth, but not to include H sections; channels, up to and including 7 inches in depth; angles, up to and including 6 inches by 6 inches; zees, up to and including 6 inches in depth of web—(s.c. 5167)

per ton $4.00 $6.00 $6.00

This item was established in 1930 to cover shapes and sections that were then made in Canada.

Production: See under item 388.

Imports: Relatively small in comparison with item 388:

	1951	1952	1954	1955
tons	17,288	14,390	8,600	11,090

Exports: Not available.

Ad valorem equivalents: Based on imports in 1955: B.P. = 3·3 p.c. and M.F.N. (United States) = 5·4 p.c.

U.S.A. Duty: $2.00 per ton plus alloy surtax.

Bound Rates: Neither the B.P. nor the M.F.N. rate is bound.

Alloy-surtax: A 5 p.c. surcharge applies to imports valued under 6½ cents per pound if the steel contains the following:

(*a*) Vanadium, 0·15 per centum or more, by weight.
(*b*) Molybdenum, 0·15 per centum or more, by weight.
(*c*) Nickel, 0·4 per centum or more, by weight.
(*d*) Chromium, 0·4 per centum or more, by weight.
(*e*) Tungsten, 0·4 per centum or more, by weight.
(*f*) Cobalt, 0·4 per centum or more, by weight.
(*g*) Manganese, 1·0 per centum or more, by weight.
(*h*) Silicon, 1·0 per centum or more, by weight.
(*i*) Any other element, not being iron or carbon, in excess of ·5 per centum by weight.

Cross-reference: Recommended Item No. 4(a).

The basic steel producers have recommended that this item be deleted. Under their proposal, imports at present classified under this item would become dutiable at 10 p.c. and 15 p.c. if types made in Canada or Free and 7½ p.c. if types not made in Canada.

The John Inglis Co. Limited recommended that the existing rates be converted to ad valorem terms but not increased. Sir Robert McAlpine and Sons (Canada) Ltd. expressed the hope that the B.P. rate applicable to this item would not be increased. For other representations re structurals, see note on item 388.

EXISTING TARIFF ITEM 388b: ANGLES, BEAMS, ETC.

388b: Iron or steel angles, beams, channels, columns, girders, joists, tees, zees and other shapes or sections, not punched, drilled or further manufactured than hot rolled, n.o.p.; piling of iron or steel, not punched or drilled, including interlocking sections, if any, used therewith, n.o.p.—(s.c. 5162)
per ton $4.00 $7.00 $7.00

This item was established in its present wording and rates in 1935 although similar items predate this one by many years.

Production: Light structural output has been as follows:

	1951	1952	1953	1954	1955
tons.......	71,414	84,615	85,971	64,143	71,792

Imports: Under this item:

	1951	1952	1953	1954	1955
tons.......	111,243	117,200	70,953	55,038	80,470

The major portion is from the United States but very sizable tonnages originated in Belgium and Luxembourg.

Exports: Not available.

Ad valorem equivalents: Based on 1955 imports from:
(*a*) the United States—5·6 p.c.
(*b*) Belgium and Luxembourg—6·6 p.c.

U.S.A. Duty: $2.00 per ton plus alloy surcharge.

Bound Rates: B.P. bound at $4.00 per ton (GATT note);
M.F.N. bound at $7.00 per ton to United States (Geneva).

Alloy-surtax: A 5 p.c. surtax applies on imports valued at under $6\frac{1}{2}$ cents per pound (see under item 388a).

Cross-reference: Recommended Item No. 4(a), (c).

Although light structurals are produced in Canada, imports supply a greater proportion of the domestic market in many years than does Canadian production. There appears, however, to be a tendency for Canadian mills to take over a greater portion of the market:

Light Structurals
(tons)

	Canadian Production	Imports	Imports as p.c. of Production
1951.....	71,414	113,566	159·0
1952.....	84,615	119,686	141·4
1953.....	85,971	74,170	86·3
1954.....	64,143	61,287	95·5
1955.....	71,792	85,795	119·4

The basic steel producers recommended that this item be deleted and that imports be classified under proposed item 5 with rates of 10 p.c. and 15 p.c. or Free and 7½ p.c. if of types not made in Canada.

The John Inglis Co. Limited urged that the level of the existing rates of duty not be increased.

(For statements of the Canadian Institute of Steel Construction, and the British Iron and Steel Federation see comments under item 388.)

The Nicholson File Company of Canada, which imports shapes and sections under this item, stated that file steel is not rolled in Canada. This was confirmed by the basic steel producers. The Nicholson File Company therefore requested duty free entry for file steel.

McKinnon Industries Limited recommended that the rates applicable to this item not be increased since the proposed higher rates would substantially increase the cost of imported steel. The motor vehicle manufacturing industry imports substantial tonnages of steel shapes under this item, 6,901 tons in 1953 and 1,626 tons in 1954. This industry requested that the existing rates remain unchanged.

EXISTING TARIFF ITEM 388c: BEAMS AND JOISTS

388c: Iron or steel beams or joists, not punched, drilled or further manufactured than hot rolled, weighing less than 5½ pounds per lineal yard for each inch in depth of web—(s.c. 5164)

5 p.c.	12½ p.c.	17½ p.c.

This item was established in 1930.

Production: See under item 388b.

Imports: Small in comparison with imports under item 388b. From 1951 to 1954 they ranged from 2,323 tons to 6,249 tons, with 5,325 tons in 1955.

Exports: Not available.

U.S.A. Duty: $2.00 per ton plus alloy surtax.

Bound Rates: Not bound.

Alloy-surtax: A 5 p.c. surtax applies to imports valued at not more than 6½ cents per pound.

Cross-reference: Recommended Item No. 4(a).

The basic steel producers recommended that this item be deleted and that imports be dutiable at 10 p.c. and 15 p.c. or Free and 7½ p.c. if types not made in Canada.

The John Inglis Co. Limited opposed this proposal and urged that there be no increase in rates. The Canadian Institute of Steel Construction and the British Iron and Steel Federation took a similar position. See notes under item 388b.

EXISTING TARIFF ITEM 388e: SIDE OR CENTRE SILL SECTIONS

388e: Iron or steel side or centre sill sections, of all sizes not manufactured in Canada, weighing not less than 35 pounds per lineal yard, not punched, drilled or further manufactured, when imported by manufacturers of railway cars, for use in their own factories—(s.c. 5168)

per ton	Free	$3.00	$3.00

This item was established in 1932 with the existing rates of duty.

Production: No statistics available.

Imports: Nil.

Exports: Nil.

U.S.A. Duty: Apparently $2.00 per ton plus alloy surcharge.

Bound Rates: B.P. bound at Free (GATT note);
M.F.N. bound at $3.00 at the request of the United Kingdom.

Alloy-surtax: Does not apply.

Cross-reference: Recommended Item No. 4(a), (c).

The basic steel producers recommended that this item be deleted since these sections are rolled in Canada and there are no imports. The rates of duty applicable to these sections would be increased to 10 p.c. B.P. and 15 p.c. M.F.N. under this proposal.

EXISTING TARIFF ITEM 388f: SASH SECTIONS

388f: Sash, casement or frame sections of iron or steel, hot or cold rolled, coated or not, not punched, drilled nor further manufactured, and similar material formed from hot or cold rolled iron or steel strip, coated or not, when imported by manufacturers of metal window sash, casements or frames for use in the manufacture of such articles, in their own factories—(s.c. 5166)

per ton	Free	$7.00	$7.00

Production: Depending upon the size, weight and kind of "section", products such as those described in this item might be extremely light (structural) sections, or bars. In any event, there are no precise data re production of such sections (if any) in Canada.

Imports: In each of 1953 and 1954, the United States was by far the chief supplier, with values of $514,000 and $399,000, respectively. From the United Kingdom, $18,000 and $28,000. The imports in 1955 were 395 tons valued at $43,674 from the United Kingdom; 2,393 tons valued at $430,814 from the United States; and 139 tons valued at $17,079 from Belgium.

Exports: Nil.

Bound Rates: B.P. bound under GATT note;
M.F.N. bound to the United States (Torquay).

Alloy-surtax: Does not apply to present item.

Cross-reference: Recommended Item No. 4(d).

Discussion of this item at the public hearings resulted in (a) a request by the manufacturers of windows and window frames that item 388f be not cancelled; (b) by the same group, that the item refer to hot-rolled sections only (deleting, for the purpose of this enquiry, not only the reference to "cold-rolled sections" but also the entire portion of the item reading "and similar material formed from hot- or cold-rolled iron or steel strip, coated or not"); and (c) concurrence by the basic producers in these emendations.

Complete window sash or frames probably would enter under item 446a. The chief competition therein is from the United Kingdom, against a B.P. rate on that item of 10 p.c.

EXISTING TARIFF ITEM 388g: RAILS, OTHER THAN RAILWAY RAILS

388g: Rails (track), of iron or steel, other than railway rails, further manufactured than hot rolled, with other sections, arched or not, welded thereto or not—(s.c. 5163)

	Free	$12\frac{1}{2}$ p.c.	35 p.c.

Production: No statistics available.

Imports: Since this item was established only in 1952, imports have entered in 1954 and 1955, as follows:

		1954	1955
U.K.	tons	115	146
U.S.A.	tons	1,561	2,109
Other	tons	2,733	1,331
Total	tons	4,413	3,586

Exports: No statistics available.

U.S.A. Duty: If not further manufactured than rolled, punched or drilled, $1.00 per ton.

Bound Rates: No rates bound under this item.

Alloy-surtax: Does not apply.

Cross-reference: Recommended Item No. 13(c).

The basic steel producers recommended that this item be deleted. They proposed that rails, not further manufactured than hot-rolled, punched or drilled, and curved, should enter as rails at rates of 10 p.c., 12½ p.c. and 20 p.c. So-called monorails, at present classifiable under this item, if any further processed, would enter as structural steel under item 388d or as manufactures of steel under item 446a if item 388g is deleted as recommended. The M.F.N. rates under these items are 25 p.c. and 22½ p.c. respectively. In support of their recommendation, the steel producers stated that many such "monorails" are fabricated sections and are not products of the basic steel industry. Where this is the case, such sections should be classified with other fabricated shapes and sections.

A number of importers of rails, other than railway rails, were represented at the public hearings and contended that imports did not adversely affect the Canadian steel producers. Of three rails submitted by these importers as exhibits, one was hot-rolled only while two were fabricated. In order to avoid increased duties, this group proposed that any new item for track rails should include rails, I or girder shaped, punched, drilled, welded, painted, etc. This would group together sections made by welding, or otherwise fabricated from structural shapes, with rails which were simply hot-rolled. It was felt, however, that it would not be desirable to attempt to interject fabricated sections into an item intended to cover rolling mill products. The proposal was therefore amended to request the continuation of item 388g.

A Canadian manufacturer of monorails stated that he produced such rails from beam sections. This company also stated that hot-rolled track for doors was being imported under this item. This firm fabricates the rails and regards its products as being fabricated sections of steel. It therefore requested the deletion of item 388g and the classification of such products under the appropriate tariff items for fabricated steel products at present in the Tariff.

In discussing this item at the public hearings serious doubts were raised as to whether the Board should deal with other than the basic steel products coming under this item.

EXISTING TARIFF ITEM 389: FERRO-ALLOYS

389: Upon any article or commodity enumerated in tariff items 377, 377a, 378a, 378b, 378c, 388a, 388b, and 388c of this Schedule, not being of greater value than 6½ cents per pound, there shall be levied, collected and paid, under regulations prescribed by the Minister, in addition to the rates of Customs duties enumerated in such said tariff items, an ad valorem surtax of five per centum when any such said article or commodity contains any one or more of the following:

(*a*) Vanadium, 0·15 per centum or more, by weight.

(*b*) Molybdenum, 0·15 per centum or more, by weight.

(*c*) Nickel, 0·4 per centum or more, by weight.
(*d*) Chromium, 0·4 per centum or more, by weight.
(*e*) Tungsten, 0·4 per centum or more, by weight.
(*f*) Cobalt, 0·4 per centum or more, by weight.
(*g*) Manganese, 1·0 per centum or more, by weight.
(*h*) Silicon, 1·0 per centum or more, by weight.
(*i*) Any other element, not being iron or carbon, in excess of ·5 per centum by weight.
(s.c. 5010, 5013, 5014, 5015, 5018)

This item, last revised in 1930, provides for the imposition of *surtax* (over and above the normal rates of duty) on certain of the basic forms of iron or steel when such basic forms (1) contain alloying components as per a prescribed list and (2) are worth not more than 6½ cents per pound.

The basic forms which attract the surtax—if alloyed—are:

Item 377:	Ingots, n.o.p.
" 377a:	Cogged ingots, blooms, slabs, billets, n.o.p.
" 378a:	Light billets, bars and rods, hot rolled.
" 378b:	" " " " " , hammered, etc.
" 378c:	" " " " " , cold-rolled, etc.
" 388a: " 388b: " 388c:	Structurals and piling, hot-rolled.

Production: The purpose of the item is to protect the Canadian manufacturer of *alloyed steels;* incidentally, of course, the item operates indirectly to protect domestic production of the alloying components themselves (e.g., nickel). The Board's Terms of Reference being restricted to basic iron or steel, per se, no inquiry was made regarding the domestic production of alloying components. As regards the production in Canada of alloyed steel (in the basic forms above referred to) see the notes on the existing substantive tariff items (re Structurals, Bars, etc.), including those on tariff items 385 and 378(d). Also see the section on Prices of Specialty Steels (so-called Stainless, Tool Steel, Drill Steel, etc.) in Part II of this Report. Although several of the basic producers manufacture forms of steel which have some alloyed content, there are two companies which confine their operations to the production of Specialty Steels: Atlas and Vanadium (Canada) at Welland and London, respectively.

Imports: It is not possible for the Bureau of Statistics to trace and segregate in the total imports of basic steels those which are alloyed as per the prescription of tariff item 389. Moreover, as steel in basic forms has steadily risen in value—with much of the ordinary mild-carbon steel being now worth more than five cents per pound—two results have come about to lessen the scope—and to that extent the protective aspect of item 389—viz.: (1) More and more alloyed steels are falling for duty purposes under value-bracket items such as items 385 and 378(d); and (2) by reason of such ascending values per pound, certain steels which formerly attracted the surtax under item 389 (valued at not over 6½ cents) are now dutiable under items which make no reference to and take no cognizance of the alloyed content.

It is of interest in this connection that, under the five statistical classifications above listed, the Bureau does record the imports of ferro-tungsten, ferro-manganese, spiegeleisen, ferro-silicon, silico-spiegel, etc. The total imports of such amounted in 1954 to 11,000 tons, valued at $3,085,000. Of this total, the

United Kingdom supplied alloys valued at $1,091,000 and the United States, alloys valued at $1,952,000. The total duties collected on the imports amounted to $99,680—slightly over 3 p.c., ad valorem.

Exports: Not separately classified.

U.S.A. Duties: See reference to these in the notes on the existing items relating to the various forms (e.g., bars and rods, ingots, structurals) on which the United States bases duty upon the alloyed content of steel.

Bound Rates: Tariff item 389 is not bound.

Most of the existing tariff items to which item 389 had been intended to apply have specific duties. In the proposals put before the Board by Atlas Steels, it was urged (1) that the alloy-content surtax should apply to more items than at present and (2) that the reference therein to 6½ cents per pound be deleted. Since one of the chief features of the overall proposals by the five basic producers (including Atlas) was for the substitution, so far as possible, of ad valorem for the existing specific duties, a stand was taken by the Board, early in the inquiry, that in so far as and to the extent that ad valorem rates were recommended on the main basic forms, there was little valid reason for an over-riding surtax on the alloyed content basis. This proposition, in principle, was accepted by the representative of Atlas Steels, *provided* that the ad valorem rates to be recommended by the Board were "sufficiently high". All arguments pro and con have been most carefully weighed by the Board: and the recommendations as to rates now made by it have been predicated upon the cancellation of tariff item 389.

EXISTING TARIFF ITEM 392a: FORGINGS

392a: Forgings of iron or steel, in any degree of manufacture, hollow, machined or not, not less than 12 inches in internal diameter; and all other forgings, solid or otherwise, in any degree of manufacture, rough turned or rough machined or not, of a weight of 20 tons or over—(s.c. 5051)

Free	15 p.c.	30 p.c.

This item was extracted from 392 in 1932 to provide for free entry for heavy forgings from the United Kingdom. The M.F.N. rate was originally 30 p.c. but was reduced to 27½ p.c. under the Canada-United States Trade Agreement of 1937. It was reduced to 15 p.c. in 1948 under GATT.

Production: No statistics available.

Imports: The larger part of imports are from the United Kingdom although a growing proportion are from the United States.

	1950	1952	1954	1955
U.K..........	$397,244	553,180	689,608	436,416
U.S.A.........	$100,211	163,030	246,737	289,675
Total.........	$497,455	716,210	946,945	749,091

Exports: Somewhat in excess of $1 million in 1955.

U.S.A. Duty: 12½ p.c.

Bound Rates: B.P. bound at Free (GATT note);
M.F.N. bound at 15 p.c. to the United States (Geneva).

Alloy-surtax: Does not apply.

Cross-reference: Recommended Item No. 14.

The basic steel producers recommended that this item be revised so as to remove many of the forgings at present classified under it. The forgings extracted would then fall under item 392, with rates of 17½ p.c. B.P. and 22½ p.c. M.F.N.

In discussing the wording of this item there was general agreement that a forging which was rough machined should qualify for entry as a forging and not be classified as a more advanced piece of equipment. It was therefore thought that the words "whether or not rough machined" should be included in any new item.

One firm requested that special provision be made for alloy steel forgings of over 41″ outside diameter, since forgings of this size are not produced in Canada.

The reference in the existing and proposed items to the diameter of a forging brought to light the difficulties of defining the diameter of irregular forgings. In many instances the customs appraiser is faced with a number of measurements, any one of which could reasonably be designated the diameter. In order to avoid this difficulty the suggestion was made, and agreed to by Dosco, that the reference to diameter might be dropped and that weight should be the sole criterion. It would be necessary to designate, in addition to weight, whether the forging is hollow or solid, e.g., solid forgings over 80,000 pounds, hollow bored forgings over 60,000 pounds and forgings hollow forged over 40,000 pounds.

The ability of Canadian mills to produce forgings of 80,000 pounds was questioned by suppliers of British forgings. They felt that the maximum size of possible Canadian production would be 40,000 pounds. These British producers pointed out that the domestic producers' proposal would increase the duty from Free to 17½ p.c. B.P. on forgings which cannot be made in Canada, as well as on those which can be made.

The British forging industry has concentrated on supplying heavy forgings to Canada, usually of types which cannot be produced in this country. Although a 7,000 ton forging press has now been installed by Dosco, the British producers questioned whether Dosco could obtain sufficiently large ingots, or had the necessary ancillary equipment and experience to produce the heavier types of forgings. The Canadian market, in their opinion, was not large enough to support a heavy forging industry producing a complete line of forgings.

The largest Canadian producer of forgings, i.e., Dosco, replied to these statements by asserting that forgings of 80,000 pounds could be made by them. They agreed however that certain shapes of forgings could not be made in their plant.

In supporting their request for greater tariff protection, Dosco stated that British prices have been as much as 40 p.c. below Canadian prices. Under such circumstances it is not possible to build up a heavy forging production in Canada, they stated.

EXISTING TARIFF ITEM 395: HAME SECTIONS

395: Sections, of iron or steel, not being ordinary square, flat or round bars, whether forged and punched or not, unfinished, when imported by manufacturers of hames for use exclusively in the manufacture of hames, in their own factories, under regulations prescribed by the Minister—(s.c. 5145)

Free	Free	Free

Statistical classification 5145 covers importations under two tariff items: 395 and 386(d) (see note on existing item 386(d)). The total for both items in 1954 was only $4,720, all from the United States. No objection was raised at the hearings to the deletion of the item, as proposed by the basic group. There are no bound rates.

Cross-reference: Recommended Item No. 4(a).

EXISTING TARIFF ITEM 395a: CUTTER BLANKS

395a: Blanks, of iron or steel, when imported by manufacturers of milling cutters for use exclusively in the manufacture of milling cutters, in their own factories, under regulations prescribed by the Minister—(s.c. 5111).

Free	$12\frac{1}{2}$ p.c.	$12\frac{1}{2}$ p.c.

Production: Not separately recorded.

Imports: In 1954, $5,300 entirely from the United States. In 1955, $6,200 all from the United States.

Exports: Nil.

Bound Rates: No rates are bound.

Alloy-surtax: Not applicable to item.

No interest was expressed in this item at the hearing.

EXISTING TARIFF ITEM 410 l: COAL CRUSHERS, ETC.

410 l: Coal crushers, ore crushers, rock crushers, stamp mills, grinding mills, rock drills, percussion coal cutters, coal augers, rotary coal drills, n.o.p., and parts of all the foregoing, for use exclusively at mines, at quarries, or in metallurgical operations or in the beneficiation of non-metalliferous ores

5 p.c.	15 p.c.	25 p.c.

This tariff item was referred to in the Letter of Reference from the Minister of Finance as "Ex. 410 l". The reason it was included by the Minister of Finance in the list forwarded to the Tariff Board arose no doubt from the fact that it was included *in so far as concerns grinding balls* in the original brief forwarded to him by the basic producers. In preparing the documents for discussion at the public hearings (Appendix A), the Board did not include this tariff item for the reason that the basic producers withdrew their proposal. For the purpose of these notes, it need be included only for the purpose of saying that no change is recommended.

EXISTING TARIFF ITEM 438f: STRIP NOT MADE IN CANADA

438f: Hot rolled strip of iron or steel with rolled or mill edge, of a class or kind not made in Canada, when imported for use in the importer's own factory, in the manufacture of the goods enumerated in tariff items 424 and 438a, or in the manufacture of parts therefor—(s.c. 5151)

per ton	Free	Free	$8.00

Production: Obviously no data are available here because the hot-rolled strip mentioned in the item is described therein as "of a class or kind not made in Canada".

Imports: In any recent year, the United States has been almost entirely the only source of supply, trifling imports having come from the United Kingdom in 1953. In 1954, imports from the United States were 8,830 tons, valued at $953,000 (whereas, in 1953, more than three times that tonnage had been imported, valued at more than $2,500,000). The value per ton of the material imported under this item in 1954 was about $108 per ton. The imports in 1955 were 356 tons, valued at $49,074.

Exports: Nil.

Bound Rates: There are no bound rates.

Alloy-surtax: Does not apply to this item.

Cross-reference: Recommended Item No. 10.

A great deal of the discussion at the public hearings related to strip with rolled or mill edge. It was contended vehemently by the Automobile Chamber of Commerce that hot-rolled strip under 4 inches wide with mill edge is not produced in Canada. In general, this was conceded by the basic producers who contended, however, that they had been supplying considerable tonnages of the wider product. At one of the sittings, spokesmen for the basic group stated emphatically that they were not pressing for the imposition of a duty on hot-rolled strip under 4 inches wide, with rolled or mill edge. There was a good deal of argument as to exactly what was meant by "rolled mill edge" as compared with "mill edge". The consensus at the meeting seemed to be that the basic producers were not pressing the point as regards hot-rolled strip with rolled or mill edge under 4 inches in width, whether or not such strip was for the automobile industry (as in item 438f) or for box strapping, cooperage, etc. Some of the users, particularly in the automobile field, felt that the free entry of the under-4 inches width should be continued, but that the item should be widened to include cold-rolled as well as hot-rolled.

EXISTING TARIFF ITEM 440f: (STEEL) FOR SHIPS

440f: Iron or steel masts, or parts thereof; iron or steel angles, beams, knees, plates and sheets; cable chain; all the foregoing for ships and vessels, under regulations prescribed by the Minister—(s.c. 5165)

Free	Free	Free

Production: See the general note regarding Canadian production under structurals, plates, sheets, etc.

Imports: In all years, the United States is by a considerable extent the chief supplier, followed, as a general rule, by the United Kingdom. In 1952, there were very substantial imports also from Japan, Belgium, and France. In 1954, the imports from the United States amounted to 13,500 tons, valued at $1,257,000 (out of a total importation in that year valued at $1,573,000). The average value from the United States was somewhat over $90 a ton, but this figure is not of great importance since it covers such a variety of forms and there is no breakdown as between structural sections, plates, etc.

Exports: Probably nil.

Bound Rates: There are no bound rates.

Alloy-surtax: Does not apply to present item.

The proposals of the basic group for the deletion of this item, which is Free under all tariffs, were strongly opposed not only by the Canadian ship-builders—such as Messrs. Vickers—but by the British Iron and Steel Federation. The former pointed out that often in respect of vessels built in Canadian shipyards for export the general drawback on materials entering into goods exported meant that funds were tied up for several years before the drawback claims could be processed. The basic group pointed out that they were not asking for the cancellation of any drawback that might have a bearing on this item. Canadian producers of chain entered into the discussion because of the fact that this item might cover importation of cable chain for ships. In this connection, they referred to the value of imports in recent years of chains for ships, particularly from

the United Kingdom, but of course accepted the fact that the duties on chain were not included within the Board's terms of reference. In the final phase of the discussion, the basic producers stated that they recognized the competition facing Canadian shipyards and that, rather than pressing keenly for the deletion of item 440f, they were merely asking that it be "reviewed" by the Board in connection with its general submissions to the Minister. The item is referred to in these notes merely for the purpose of stating that no change therein is being recommended.

EXISTING TARIFF ITEM 441c: (STEEL) FOR RIFLES

441c: Steel imported by manufacturers for use in their own factories in manufacturing rough unfinished parts of rifles, when such parts are to be used in rifles to be made for the Government of Canada, under regulations prescribed by the Minister—(s.c. 5695)

Free Free Free

This tariff item was referred to in the Letter of Reference from the Minister of Finance. The reason it was included by the Minister of Finance in the list forwarded to the Tariff Board arose no doubt from the fact that it was included in the original brief forwarded to him by the basic producers. In preparing the documents for discussion at the public hearings (Appendix A), the Board did not include this tariff item for the reason that the basic producers did not appear concerned about pressing for its inclusion. It was not discussed at the public hearings and, for the purpose of these notes, it need be included only for the purpose of saying that no change is recommended.

EXISTING TARIFF ITEMS 442, 442b, 442c: (STEEL) FOR FARM EQUIPMENT AND MACHINERY

442: Articles and materials which enter into the cost of manufacture of the goods enumerated in tariff items 409, 409a, 409b, 409c, 409d, 409e, 409f, 409g, 409h, 409i, 409j, 409k, 409l, 409m, 409n, 409o, 409q, 427b(1), 439c and 618b(1), when imported for use in the manufacture of the goods enumerated in the aforesaid tariff items, or in the manufacture of parts therefor, under such regulations as the Minister may prescribe

Free Free Free

442b: Materials which enter into the construction and form part of cream separators when imported by manufacturers of cream separators for use exclusively in the manufacture of cream separators, in their own factories, under regulations prescribed by the Minister

Free Free Free

442c: Articles of metal when imported by manufacturers of cream separator parts for use exclusively in the manufacture of cream separator parts, in their own factories, under regulations prescribed by the Minister

Free Free Free

These tariff items were referred to in the Letter of Reference from the Minister of Finance. The reason they were included by the Minister of Finance in the list forwarded to the Tariff Board arose no doubt from the fact that they were included in the original brief forwarded to him by the basic producers. The basic producers made abundantly clear at public hearings that they had no intention that their proposals should affect these items which relate entirely to steel used in the production of various agricultural implements and machinery. This note is inserted merely to make clear that no change in any of these three items is being recommended.

EXISTING TARIFF ITEM 458: (STEEL) FOR TRACTORS

458: Materials, including all parts, when imported by manufacturers of traction engines for use exclusively in the manufacture of traction engines, in their own factories, under regulations prescribed by the Minister

Free	Free	Free

This tariff item was referred to in the Letter of Reference from the Minister of Finance. The reason it was included by the Minister of Finance in the list forwarded to the Tariff Board arose no doubt from the fact that it was included in the original brief forwarded to him by the basic producers. The basic producers made abundantly clear at public hearings that they had no intention that their proposals should affect this item, which relates entirely to steel used in the production of traction engines. This note is to make clear that no change in the item is being recommended.

EXISTING DRAWBACK ITEM 1005

1005: Steel—When used in the manufacture of cutlery or stove trimmings
99 p.c.

This item has in the past provided a 99 p.c. drawback of duties paid on "steel" (in any form) imported and used in the production in Canada of "cutlery or of stove trimmings". Actually, the forms of steel on which duty-drawbacks normally are paid under this item are bars and strip. The total paid in drawback in 1954-55 was $112,000; about the same figure has been paid in several recent years.

Manufacturers of cutlery—particularly of knives—get drawback of duty on bars and strip of both stainless and carbon steel; drawback does *not* apply in respect of knife-blanks, which may be imported under item 429(a) at Free, 7½ p.c. and 10 p.c. The finished knife enters under the same item at varying rates of duty (e.g.) table knives at 15 p.c., 25 p.c. and 35 p.c.; many other knives are Free under B.P. tariff. Stainless steel in bar form is made in Canada by Atlas Steels, but that firm does not expect to be in production of stainless cutlery-strip for a year or more. Applicants for retention of the drawback privilege contended that already competition in cutlery in Canada was serious—to the extent that, in value, imports exceeded domestic production; that Japanese cutlery of first-class quality was laid-down in Canada below the domestic cost of production and was growing in consumer acceptance; that free entry for so much of the cutlery lines meant that the domestic producers must, to remain in business, have recourse to Drawback Item 1005, particularly as regards such steel (and especially single-bevelled and double-bevelled stainless strip) as was not made in Canada.

After hearing the pleas of the cutlery producers, the basic group suggested that Drawback Item 1005 perhaps should continue in operation for the cutlery industry, preferably with a "class or kind" qualification. Atlas Steels went further and, as regards stainless strip, intimated that they should not press "at this time" for cancellation of the drawback in its entirety (i.e., cancel as regards forms *other than* strip).

It was made clear at the public hearings that by far the larger part of the average of $100,000—$118,000 paid yearly in drawback under this item went to the cutlery industry. However, some part of the total benefits the stove industry because of the phrase "stove trimmings" in the item. The basic group stated that they really were less concerned about the continuance of drawback for the stove industry than about the administration of the present wording—which,

they alleged, caused them to raise the matter in their proposals. A drawbacks officer present at the hearings stated that the drawback was held to apply to "anything manufactured of steel" (or "steel used in the manufacture of") that was a *non-essential* part of a stove. It would appear obvious that the drawback as at present administered cannot mean a great deal to the stove industry—nor, by the same token, to the basic steel producers.

Cross-reference: Recommended Item No. 1005
Recommended Items Nos. 7; 10.

EXISTING DRAWBACK ITEM 1006

1006: Steel—When used in the manufacture of scythes, reaping hooks, hay or straw knives, hoes, agricultural forks, hand rakes, axes, or windmills
99 p.c.

It is obvious from its wording that this item provides for drawback of duties paid on many steel products on which no duty applies: agricultural implements or parts thereof or therefor. To that extent, this item is redundant and inoperative except, possibly, as regards sales through an importer's warehouse (which would be rare). There are named in it, however, one or two products which are *not* (for tariff purposes) agricultural implements, notably axes. It is more than probable that the makers of axes—and possibly of hoes—drew the larger part of the drawback paid, which has ranged from \$1,000 to \$5,000 over recent fiscal years. Axes are dutiable under item 431a at 10 p.c., 15 p.c. and 20 p.c. It was stated in evidence at the hearings that, most of the time, the Canadian manufacturer of axes purchases his raw material (steel) in Canada at less than the duty-paid price of such steel were it to be imported. It is difficult to see that retention of this item, solely for axes, is warranted.

Cross-reference: Various tariff items, depending upon form in which imported.

EXISTING DRAWBACK ITEM 1007

1007: Flat spring steel, steel billets and steel axle bars—When used in the manufacture of springs and axles for vehicles other than railway or tramway vehicles
99 p.c.

The drawback of duty paid under this item has, in recent years, ranged from a low of \$38,000 in 1938 to a high of \$147,000 in 1952–53. Practically all the items in respect of which drawback is paid relate to steel—in various forms—used in the manufacture of parts for motor vehicles, almost all of which are dutiable on importation at from $17\frac{1}{2}$ p.c. to 25 p.c. It was contended at the hearings that, owing to the volume of production of such parts in the United States, and also to the keen purchasing methods of the domestic automobile industry, elimination of Drawback Item 1007 would—despite the duty on the finished component—mean that Canadian parts producers probably would be forced to discontinue production of a substantial number of parts they now supply to the motor car industry. They claimed, further, that apart from the price-factor (as between Canadian and imported billets, bars, etc.) there was no domestic production whatsoever of precision-rolled rods for use in making helical front springs for automobiles. Under the operation of the drawback, practically all the springs required for motor vehicle production in Canada are manufactured in this country (and that by one or two companies). The steel represents from 50 to 65 p.c. of the cost of production of the finished spring.

As regards the contention of the spring-producers that no Canadian mill could supply precision-rolled rods for springs, Atlas Steels stated that "we have a precision rolling mill that rolls from $\frac{5}{8}''$ to $1\frac{1}{4}''$ and have had it for several years".

Canadian producers of axles for motor vehicles were as emphatic as the makers of springs in declaring that they probably could not operate at all were Drawback Item 1007 to be cancelled.

The Canadian Automobile Chamber of Commerce gave evidence to the effect that "out of a total usage in 1953" (of steel imported under certain named tariff items) "of 156,000-odd tons, 41,000-odd (tons) qualified for the drawback" (under item 1007). And further, "of flat spring steel and steel axle bars, total purchases amounted to 47,774 tons in 1953 and 27,868 tons in 1954. Of these amounts, only 6,532 tons and 3,561 tons were imported, respectively."

Cross-reference: Recommended Items Nos. 3; 5(a).

EXISTING DRAWBACK ITEM 1009

1009: Steel—When used in the manufacture of files, augers, auger bits, bit braces, wrenches, hammers or hatchets 60 p.c.

The total duty-drawback under this item in 1954-55 was $15,000. This total would be drawn by the manufacturers of the various tools named in the item which are dutiable as follows: Augers, bits, wrenches, hammers and hatchets, under item 431b at 10 p.c., 22½ p.c. and 35 p.c.; files, under item 431f at Free, 22½ p.c. and 35 p.c.

For files, the base stock would be chiefly in the form of bars, carbon type; less than half of the tonnage would be in irregular-shape sections. On the ground of severe competition from Europe—particularly from the United Kingdom, duty free—the file manufacturers requested (1) a tariff item to provide free entry under B.P. and M.F.N. tariffs on bars, rods, sheet or strip, hot- or cold-rolled or drawn, up to 1·50 carbon content, for use in the manufacture of files and rasps, or (2) extension of Drawback Item 1009 to provide drawback of 99 p.c.; or, (3) in any event, continuance of the item in its present form.

At the hearings, all five of the basic producers said that they did not make file steel and had no objection to provision being made for the same.

Cross-reference: Recommended Item No. 1009, and various tariff items, depending upon form in which imported.

EXISTING DRAWBACK ITEM 1015

1015: Steel—When used in the manufacture of skates or bicycle chain 40 p.c.

Another provision exists as regards steel used in the manufacture of skates, viz: Memo D17, DB.15, Order-in-Council P.C. 74/1736, 28/8/33 Double Bevelled Edge Rolled Steel used in the manufacture of skates 99 p.c. drawback

Totals paid under this item have varied from $241 in 1937–38 to $2,400 in 1950-51. In 1954-55, about $1,000.

Evidence at the hearings was to the effect that the Canadian manufacturer of bicycle chains had found United Kingdom competition so keen that he had dropped the line a few years ago. Presumably, therefore, no drawback duty under this item relates to bicycle chains; all the drawback must go to the manufacturers of skates. These (other than roller-skates) are dutiable at rates of 15 p.c., 25 p.c. and 30 p.c.

The drawback payments shown above might appear to include the 40 p.c. drawback on ordinary steel *and* the 99 p.c. drawback on double bevelled-edge steel. However, the drawbacks officer present at the hearings stated that the total applied only in respect of the 40 p.c. drawback and that no drawback had been paid under the 99 p.c. proviso.

On the ground of severe competition, the skate-makers requested continuance of the drawback of 40 p.c.

Cross-reference: Various tariff items, depending upon form in which steel is imported.

EXISTING DRAWBACK ITEMS 1023 and 1025

1023: Hot rolled hexagon iron or steel bars—When used in the manufacture of cold drawn or cold rolled iron or steel bars
60 p.c.

1025: Hot rolled hexagon bars of Bessemer steel not being of greater value than 4 cents per pound—When used in the manufacture of cold drawn bars
99 p.c.

Since the two drawback items shown apply to the same industry, they are jointly the subject of this note.

Drawback Item 1023 deals with hot-rolled hexagon bars of any kind of steel, with a drawback of 60 p.c.; whereas 1025 is limited to Bessemer hexagons valued at no more than four cents per pound, with a drawback of 99 p.c. Due to the increase in the price of steel in recent years (by reason of which Bessemer hexagons became worth more than four cents per pound) item 1025 ceased to operate. The consequence has been that, of late, the 60 p.c. drawback applied to *all* hot-rolled hexagon bars imported for cold-drawing. The total amount paid in drawback in 1954-55 was $29,492.

Bessemer hexagons are not produced in Canada. For that reason, the cold-drawers and cold-rollers asked for re-instatement of Drawback Item 1025 without the price-per-pound limitation and also for continuance of Drawback Item 1023. In general, these requests were endorsed by the Automobile Chamber of Commerce and opposed by the basic producers.

On most cold-rolled or cold-drawn bars, the M.F.N. rate is 20 p.c.

Cross-reference: Recommended Item 1023; and various tariff items, depending upon form in which steel is imported.

EXISTING DRAWBACK ITEM 1027

1027: Materials—When used by manufacturers of malleable iron castings or steel shafting for use exclusively in the manufacture of such articles for use in the manufacture of goods enumerated in tariff items 409a, 409b, 409c, 409d, 409e, 409f, 409g, 409j, 409o, 409p and 439c
99 p.c.

No drawback has been paid under this item for many years. It could be of no value except in respect of the rare transaction through an entrepreneur. (See tariff item 442 et seq.)

EXISTING DRAWBACK ITEM 1028

1028: Steel billets—When used in the manufacture of the seamless pipes, tubes and flues enumerated in tariff items 399 and 410d: no drawback shall be paid under this item when the pipes, tubes and flues enumerated in tariff items 399 and 410d are dutiable under the General Tariff of Schedule A to this Act 99 p.c.

This strangely-worded item has had varying weight—ranging from a high in drawbacks of $26,000 to a low of $500 in 1954-55. Apparently its purpose was to provide free entry for billets used in producing seamless tubes which would, if imported, themselves enter duty-free under certain named tariff items. The

only representations at the public hearings were by Page-Hersey, which asked that the drawback item remain in effect *unless* duties were imposed on the seamless tubes (under Reference No. 119).

EXISTING DRAWBACK ITEMS 1045 and 1045a

1045: Steel sheets, hot or cold rolled or coated with lead or with lead and tin, ·064 inch to ·022 inch in thickness, 20 to 42 inches in width and 50 to 120 inches in length—When used in the manufacture of stampings for automobiles 99 p.c.

1045a: Steel sheets, hot or cold rolled or coated with lead or with lead and tin, ·064 inch to ·022 inch in thickness, 50 to 120 inches in length, and not less than 20 inches in width—When imported other than under the General Tariff, during the period August 1st, 1955 to December 31st, 1956, for use in the manufacture of stampings for automobiles 99 p.c.

It would seem feasible to comment in one note on these two items, since evidence at the public hearings—particularly that by the Automobile Chamber of Commerce—was to the effect that item 1045 had ceased to be operative and had been "superseded by Drawback Item 1045a". Figures as to the amounts paid under the items were produced by the drawbacks officer present in the form of a total, covering both items. This total drawback ranged as follows:

Fiscal years 1950–51	$348,100
" " 1951–52	610,161
" " 1952–53	485,328
" " 1953–54	652,954
" " 1954–55	414,219

It was indicated that these amounts of drawback paid covered payments in respect of hot-rolled sheets, cold-rolled sheets and terneplate. These payments would be in large part to manufacturers of automotive parts—with some, no doubt, direct to the automobile producers. In this connection, it was stated at the hearings that "about one-third of the sheet, strip and terneplate used in the motor vehicle manufacturing industry (in 1954) falls within the range of Drawback Items 1045 and 1045a". Some would be ineligible on a dimensional basis. Further, that, (as regards the extent to which such steel is an element in the cost of producing automotive stampings) "we may use an industry-wide average which has been conservatively estimated at not less than 60 per cent of the cost of the finished stamping". And, further "if the drawbacks under 1045 and 1045a were to be removed, the automotive stampers would have to have a direct and compensating increase in the tariffs on automotive stampings, not just (on) those that are now dutiable but also on those that are free of duty".

Some parts manufacturers said that they had to import a large proportion of their requirements of cold-rolled sheets, particularly in the lighter gauges; and, of course, all had to rely upon imported terneplate—for those applications where terneplate is deemed to be imperative—because it is not produced in Canada. (The basic group frequently repeated that they were not seeking cancellation of the drawback on *terneplate*).

Cross-reference: Various tariff items, depending upon the form in which the steel is imported; probably 7(a), (b); 9.

EXISTING DRAWBACK ITEM 1057

1057: Materials—When used in the manufacture of articles entitled to entry under tariff item 442, when such articles are sold to manufacturers to be used as specified in said item 99 p.c.

The amount of drawback paid under this item in 1954-55 was nil. The drawback item can relate only to warehouse transactions, since all materials entering into the cost of production of agricultural machinery enter Free under item 442 and there would seem to be no necessity for administering a drawback to cover only occasional warehouse transactions. No drawbacks have been paid since 1939.

EXISTING DRAWBACK ITEM 1058

1058: Materials—When used in the manufacture of articles entitled to entry under tariff items 411 and 411a, not including saws, and articles entitled to entry under tariff item 410 l, when such articles are used as specified in said items 60 p.c.

Since this drawback item in its present form applies to many products (as well as to steel) the Board is not recommending any change therein and the purpose of this note is so to state.

"END-USE" or "PURPOSE" ITEMS DROPPED:

379(a)	386(m)(i)
379(b)	386(m)(ii)
379(c)	386(n)
379(e)	386(o)
386(a)	386(p)
386(c)	386(s)
386(d)	386(t)
386(e)	386b
386(f)	387c
386(i)	388e
386(j)	395
386(k)	395a
386(l)	

DRAWBACK ITEMS DROPPED:

1006
1007
1015
1025
1027
1045
1045a
1057

TOTALS OF DRAWBACK PAYMENTS BY NOTED FISCAL YEARS IN CONNECTION WITH SPECIFIED SCHEDULE "B" TARIFF ITEMS

Item No.	1937–38	1938–39	1949–50	1950–51	1951–52	1952–53	1953–54	1954–55	1955–56
					(in dollars)				
1005	19,460·97	10,388·87	86,304·49	82,487·86	118,390·39	116,440·29	117,180·43	111,899·52	94,285·98
1006	3,981·24	4,197·78	1,717·24	841·93	—	5,475·15	2,061·15	4,374·04	2,608·41
1007	61,014·02	38,171·15	88,041·68	57,083·08	78,882·40	146,829·96	123,894·55	83,940·41	71,475·10
1009	14,669·41	6,325·29	14,192·57	10,416·16	13,359·87	14,844·61	13,132·11	15,304·87	12,934·78
1015	241·23	597·10	1,558·82	2,424·50	1,394·48	402·47	251·02	1,055·24	1,181·31
1023	2,564·02	2,026·24	36,059·58	45,643·19	49,387·50	42,212·52	58,799·09	29,492·38	59,665·80
1025	32,421·57	25,060·10	4,279·76	452·12	39·30	—	—	—	—
1027	114·04	—	—	—	—	—	—	—	—
1028	26,102·67	16,206·45	—	12,633·34	7,183·05	7,629·81	3,038·54	521·39	—
1045	173,651·99	152,948·43	239,748·58	337,692·28	186,555·96	359,881·71	415,298·89	317,480·40	447,173·48
1045a	—	—	—	10,407·80	423,605·75	125,440·06	237,655·43	96,739·30	
1057	10,864·74	5,512·12	—	—	—	—	—	—	—
1058	5,036·77	36,928·95	33,589·01	16,603·10	30,149·85	7,502·62	19,212·37	12,953·68	26,866·95

APPENDICES

TO THE

REPORT OF THE TARIFF BOARD

ON

REFERENCE NO. 118

73371—14

REFERENCE NO. 118

ANALYSIS OF THE CLASSIFICATION OF PRIMARY IRON AND STEEL PRODUCTS TO SHOW THE PRESUMED EFFECT OF PROPOSALS

MADE BY

PRODUCERS OF BASIC IRON AND STEEL

(As used for discussion at all public sittings of
The Tariff Board in respect of
Reference No. 118)

Distributed to Interested Parties in December, 1955

73371—14½

1. The (proposed) tariff items shown in the left-hand column of the attached draft Schedule should be read in connection with, and as governed by, the revised Definitions suggested by the producers of basic Iron and Steel.

2. The items shown in the right-hand column of the attached draft Schedule are as at present in the Customs Tariff, as regards both wording and rates of duty. As at present administered, they are governed by the existing Definitions in the Customs Tariff. It is important to note, however, that, in the event of adoption of revised Definitions, many items would be governed by the latter.

3. The tariff rates shown under the items in the right-hand column are those of the British Preferential, the Most-Favoured-Nation, and the General Tariff, respectively. Wherever in any column a second rate is shown, this latter is a Trade Agreement rate and at present the operative rate.

4. Excerpts from existing tariff items are frequently shown (in brackets) where less than the complete existing item would appear to be affected by proposed changes in wording or rate.

5. Necessarily, an existing item may appear more than once in the right-hand column, depending upon the degree of comprehensiveness of the proposed new item.

* * * *

PROPOSED DEFINITIONS	EXISTING DEFINITIONS
1. (No change proposed)	"Rolled Iron" or "Rolled Steel" means iron or steel hot rolled only.
[2.] "Plate", when applied to iron or steel, means a rectangle, circle or sketch, flat or in coils, whether or not with sheared, cut or mill edges, of the following dimensions: Over 6 inches but not over 48 inches in width—0·2300 inch or over in thickness Over 48 inches in width—0·1800 inch or over in thickness	"plate" when applied to iron or steel means a rectangle, circle or sketch as cut in a plate mill, more than fourteen inches in width, and 0·1875 inch or more in thickness, with variations from such thickness not exceeding 0·015 inch;
3. "Sheet" or "Strip", when applied to iron or steel, means flat rolled rectangles, whether or not in coils, of the following dimensions: Sheet: Over 12 inches but not over 48 inches in width—0·2299 inch and thinner Over 48 inches in width—0·1799 inch and thinner Strip: Over 6 inches but not over 12 inches in width—0·2299 inch and thinner Six inches or less in width—0·2030 inch and thinner ("hoop" and "band" no longer defined)	"hoop, band and strip" when applied to iron or steel mean flat forms not more than fourteen inches in width and less than 0·1875 inch in thickness; "sheet" when applied to iron or steel means a rectangle more than fourteen inches in width and less than a plate in thickness;
4. "Skelp", when applied to iron or steel, means flat rolled iron or flat rolled steel, whether in lengths or in coils, with either rolled edge or cut edge, bevelled or not, for use in the manufacture of pipes and tubes.	None
* * * *	* * * *

PROPOSED NEW ITEMS	EXISTING TARIFF ITEMS
Item	Item
1. Pig iron, n.o.p., and sponge iron 5 p.c. 5 p.c. 20 p.c. (All items opposite to be cancelled)	374 Pig iron, n.o.p. per ton $1.50 $2.50 $2.50 376 Sponge iron Free Free Free
* * * *	* * * *
2. (a) Ingots of iron or steel, n.o.p. 5 p.c. 10 p.c. 20 p.c.	377 Ingots, of iron or steel, n.o.p. per ton $1.50 $3.00 $3.00
(b) Blooms, slabs, billets, sheet bars, of iron or steel, n.o.p. 5 p.c. 10 p.c. 20 p.c.	377a Blooms, cogged ingots, slabs, billets, n.o.p., sheet bars, of iron or steel, by whatever process made, n.o.p. per ton $2.50 $4.50 4.00 $4.50
(All items opposite to be cancelled) (Imports under proposed item 2, subsections (a) and (b), would be affected by the proposed revision of tariff item 389, shown in this draft schedule as proposed item 11)	377b Ingots, cogged ingots, blooms, slabs, billets, n.o.p., of iron or steel, valued at not less than 3 cents per pound, when imported by manufacturers of steel for use exclusively in the manufacture of steel, in their own factories under regulations prescribed by the Minister Free Free 5 p.c.
	377c Ingots, cogged ingots, blooms, slabs, billets, n.o.p., of iron or steel, of a class or kind not made in Canada, when imported by manufacturers of forgings for use exclusively in the manufacture of forgings, in their own factories, under regulations prescribed by the Minister per ton Free $3.00 $3.00
	377d Billets of steel of Bessemer quality, when imported by manufacturers of seamless steel tubes for use exclusively in the manufacture of seamless steel tubes, in their own factories Free 5 p.c. 5 p.c.
	377e Wrought or puddled iron in the form of billets Free – –
	378 (Billets of iron or steel weighing less than 60 pounds per lineal yard)
	(a) Not further processed than hot rolled, n.o.p. per ton $4.25 $7.00 $7.00
	(b) Not further processed than hammered or pressed, n.o.p. 10 p.c. 25 p.c. 20 p.c. 30 p.c.
	(c) Cold rolled, drawn, reeled, turned or ground, n.o.p. 10 p.c. 25 p.c. 20 p.c. 30 p.c.
	(d) Hot rolled, valued at not less than 4 cents per pound, n.o.p. Free $12\frac{1}{2}$ p.c. 15 p.c.
	1005 (Ingots, cogged ingots, blooms, billets and slabs for use in the manufacture of cutlery or stove trimmings) Drawback of 99 p.c.

PROPOSED NEW ITEMS	EXISTING TARIFF ITEMS
	1006 (Ingots, cogged ingots, blooms, billets and slabs for use in the manufacture of scythes, reaping hooks, hay or straw knives, hoes, agricultural forks, hand rakes, axes, or windmills) Drawback of 99 p.c.
	1007 (Steel billets) Drawback of 99 p.c.
	1009 (Ingots, cogged ingots, blooms, billets and slabs for use in the manufacture of files, augers, auger bits, bit braces, wrenches, hammers or hatchets) Drawback of 60 p.c.
	1015 (Ingots, cogged ingots, blooms, billets and slabs for use in the manufacture of skates or bicycle chain) Drawback of 40 p.c.
	1027 (Ingots, cogged ingots, blooms, billets and slabs for use in making certain agricultural implements, pasteurizers and farm or logging sleighs and wagons) Drawback of 99 p.c.
	1028 Steel billets when used in the manufacture of the seamless pipes, tubes and flues enumerated in tariff items 399 and 410d: no drawback shall be paid under this item when the pipes, tubes and flues enumerated in tariff items 399 and 410d are dutiable under the General Tariff of Schedule A to this Act. Drawback of 99 p.c.
	Note: The adoption of new definitions would not redefine any ingots, blooms, slabs, billets or sheet bars.
* * * *	* * * *
3. Track rails of rolled iron or steel, tee or girder shaped, of any weight, punched, drilled or not 10 p.c. 12½ p.c. 20 p.c.	387 Railway rails, of iron or steel, of any weight, or for any purpose, punched, drilled or not, n.o.p. per ton $4.50 $6.00 $7.00
(All items opposite to be cancelled)	387c Steel grooved (or girder) rails for electric tramway use, weighing not less than 75 pounds per lineal yard, punched, drilled, or not, of shapes and lengths not made in Canada per ton Free $7.00 $7.00
	388g Rails (track), of iron or steel, other than railway rails, further manufactured than hot rolled, with other sections, arched or not, welded thereto or not Free 12½ p.c. 35 p.c.
(No change proposed)	387b Railway intersection layouts, intersections, switches, crossings, frogs, guard rails, of iron or steel 15 p.c. 25 p.c. 30 p.c.
* * * *	* * * *
4. Railway tie-plates, fish-plates, splice bars and other joint bars, of rolled iron or steel, punched, drilled, or not 10 p.c. 15 p.c. 20 p.c.	387a Railway ties, fish-plates, splice bars, rail joints, and tie-plates, of iron or steel per ton $5.00 $7.00 $8.00
(Item opposite to be cancelled)	
* * * *	* * * *

PROPOSED NEW ITEMS	EXISTING TARIFF ITEMS
5. Structural shapes of iron or steel, not punched, drilled, or further manufactured than hot rolled: (a) Angles, beams, channels, tees or zees, of regular or irregular design, (*) n.o.p.; sheet piling with or without handling holes, including interlocking sections used therewith 10 p.c. 15 p.c. 20 p.c.	388 Iron or steel angles, beams, channels, columns, girders, joists, tees, zees and other shapes or sections, not punched, drilled or further manufactured than hot rolled, weighing not less than 35 pounds per lineal yard, n.o.p.; piling of iron or steel, not punched or drilled, weighing not less than 35 pounds per lineal yard, including interlocking sections, if any, used therewith, n.o.p. per ton Free \$3.00 \$3.00
(*) To include centre sills, bulb angles, car and shipbuilding channels and beams, elevator tees	388a Iron or steel shapes or sections, as hereunder defined, not punched, drilled or further manufactured than hot rolled, weighing not less than 35 pounds per lineal yard, viz.: I-beams, up to and including 6 inches in depth, but not to include H sections; channels, up to and including 7 inches in depth; angles, up to and including 6 inches by 6 inches; zees, up to and including 6 inches in depth of web per ton \$4.00 \$6.00 \$6.00
5. (b) Angles over 8 inches in length of one or both legs; beams over 18 inches in depth of web; channels over 15 inches in depth of web; zees over 6 inches in depth of web; all the foregoing when not made in Canada Free $7\frac{1}{2}$ p.c. 20 p.c. (All items opposite to be cancelled)	388b Iron or steel angles, beams, channels, columns, girders, joists, tees, zees and other shapes or sections, not punched, drilled or further manufactured than hot rolled, n.o.p.; piling of iron or steel, not punched or drilled, including interlocking sections, if any, used therewith, n.o.p. per ton \$4.00 \$7.00 \$7.00
(Imports under proposed item 5, subsections (a) and (b), would be affected by the proposed revision of tariff item 389, shown in this draft schedule as proposed item 11)	388c Iron or steel beams or joists, not punched, drilled or further manufactured than hot rolled, weighing less than $5\frac{1}{2}$ pounds per lineal yard for each inch in depth of web 5 p.c. $12\frac{1}{2}$ p.c. $17\frac{1}{2}$ p.c.
	388e Iron or steel side or centre sill sections, of all sizes not manufactured in Canada, weighing not less than 35 pounds per lineal yard, not punched, drilled or further manufactured, when imported by manufacturers of railway cars, for use in their own factories per ton Free \$3.00 \$3.00
	440f Structural shapes for ships Free Free Free
(No change proposed)	388d Iron or steel angles, beams, channels, colums, girders, joists, piling, tees, zees' and other shapes or sections, punched, drilled or further manufactured than hot rolled or cast, n.o.p. 20 p.c. 35 p.c. 40 p.c. $17\frac{1}{2}$ p.c. 25 p.c.
* * * *	* * * *
6. Hot rolled bars and rods of iron or steel, plain or deformed, in straight lengths or coils, viz.; rounds, 7/32 inch or over in diameter; squares, $\frac{1}{4}$ inch to $5\frac{1}{2}$ inches inclusive; round cornered squares, $\frac{3}{8}$ inch to 8 inches inclusive; hexagons, $\frac{1}{4}$ inch to 4-1/16 inches inclusive; flats, 13/64 inch and over, and up to 6 inches inclusive, in width. Bar size shapes: angles, channels, tees and zees, if their greatest sectional dimension is less than 3 inches; ovals, half-ovals and half-rounds; sections of irregular design not over 12 inches in width, n.o.p. 10 p.c. 15 p.c. 20 p.c.	377e Wrought or puddled iron in the form of bars or rods Free — — 377f Bars or rods, of iron or steel, hot rolled, viz.:—Rounds over 4-$\frac{7}{8}$ inches in diameter and squares over 4 inches per ton Free \$7.00 \$7.00 \$6.00

PROPOSED NEW ITEMS	EXISTING TARIFF ITEMS
(All items opposite to be cancelled) (Imports under this proposed item would be affected by the proposed revision of tariff item 389, shown in this draft schedule as proposed item 11)	378 (Bars and rods of iron or steel) (a) Not further processed than hot rolled, n.o.p. per ton $4.25 $7.00 $7.00 (d) Hot rolled, valued at not less than 4 cents per pound, n.o.p. Free 12½ p.c. 15 p.c.
	379 (a) Rods, when imported by manufacturers of horseshoe nails for use exclusively in the manufacture of horseshoe nails, in their own factories Free Free Free (b) Rods, in the coil, or bars, one and one-eighth of an inch in diameter and over, when imported by manufacturers of chain for use exclusively in the manufacture of chain, in their own factories per ton Free $3.50 $3.50 (c) Bars, when imported by manufacturers of shovels for use exclusively in the manufacture of shovels, in their own factories per ton Free $2.75 $3.00 (d) Rods, in the coil, not over .375 inch in diameter when imported by manufacturers of wire for use exclusively in the manufacture of wire, in their own factories per ton $2.25 $5.00 $5.00 (e) Bars of iron or steel, hot rolled, 5 inches in diameter and larger, when imported by manufacturers of polished shafting for use in their own factories per ton Free $7.00 $7.00
	388b Iron or steel angles, beams, channels, columns, girders, joists, tees, zees and other shapes or sections, not punched, drilled or further manufactured than hot rolled, n.o.p.; piling of iron or steel, not punched or drilled, including interlocking sections, if any, used therewith, n.o.p. per ton $4.00 $7.00 $7.00
	395 Sections, of iron or steel, not being ordinary square, flat or round bars, whether forged and punched or not, unfinished, when imported by manufacturers of hames for use exclusively in the manufacture of hames, in their own factories, under regulations prescribed by the Minister Free Free Free
	395a Blanks, of iron or steel, when imported by manufacturers of milling cutters for use exclusively in the manufacture of milling cutters, in their own factories, under regulations prescribed by the Minister Free 12½ p.c. 12½ p.c.
	1005 (Bars and rods) Drawback of 99 p.c.
	1006 (Bars and rods) Drawback of 99 p.c.
	1007 (Flat spring steel and steel axle bars) Drawback of 99 p.c.
	1009 (Bars and rods for use in the manufacture of files, augers, auger bits, bit braces, wrenches, hammers or hatches) Drawback of 60 p.c.

PROPOSED NEW ITEMS	EXISTING TARIFF ITEMS
	1015 (Bars and rods for use in skates or bicycle chain) Drawback of 40 p.c. Double Bevelled Edge Rolled Steel used in the manufacture of skates Drawback of 99 p.c.
	1023 Hot rolled hexagon iron or steel bars when used in the manufacture of cold drawn or cold rolled iron or steel bars Drawback of 60 p.c.
	1025 Hot rolled hexagon bars of Bessemer steel not being of greater value than 4 cents per pound when used in the manufacture of cold drawn bars Drawback of 99 p.c.
	1027 Steel bars and rods for use in the manufacture of malleable iron castings or steel shafting for use in the manufacture of certain farm implements, pasteurizers, farm or logging sleighs and wagons Drawback of 99 p.c.
	1057 Materials for the manufacture of agricultural implements Drawback of 99 p.c.
	1058 (Drawback for grinding balls and grinding rods to be deleted) Drawback of 60 p.c.
(No change proposed)	378 Bars and rods: (b) Not further processed than hammered or pressed, n.o.p. 10 p.c. 25 p.c. 30 p.c. 20 p.c. (c) Cold rolled, drawn, reeled, turned or ground, n.o.p. 10 p.c. 25 p.c. 30 p.c. 20 p.c.
(No change proposed)	388f Sash, casement or frame sections of iron or steel, hot or cold rolled, coated or not, not punched, drilled nor further manufactured, and similar material formed from hot or cold rolled iron or steel strip, coated or not, when imported by manufacturers of metal window sash, casements or frames for use in the manufacture of such articles, in their own factories per ton Free \$7.00 \$7.00
(No change proposed)	394 (Axle bars and axle blanks) (a) For railway vehicles, including locomotives and tenders 7½ p.c. 27½ p.c. 30 p.c. 22½ p.c.
	394 (b) For other vehicles, n.o.p. 22½ p.c. 30 p.c. 35 p.c. 22½ p.c. (c) N.o.p. 20 p.c. 27½ p.c. 30 p.c. 22½ p.c.
* * * *	* * * *
7. Skelp, of iron or steel: (a) With mill or bevelled edge, of a width not made in Canada but not exceeding 4½ inches in width Free 5 p.c. 5 p.c. (b) N.o.p. 10 p.c. 15 p.c. 20 p.c.	384 Skelp of iron or steel, hot rolled, when imported by manufacturers of pipes and tubes for use exclusively in the manufacture of pipes and tubes, in their own factories, under regulations prescribed by the Minister Free 5 p.c. 5 p.c.

PROPOSED NEW ITEMS	EXISTING TARIFF ITEMS

(All items opposite to be cancelled)

(The Tariff Board understands that the Customs Authorities admit under existing item 384, in addition to skelp, so-called, hot rolled, plate, sheet and strip for the manufacture of pipes and tubes)

See also existing item 386(r) (cold rolled sheet or strip for use in the manufacture of pipes and tubes) opposite proposed new cold rolled sheet and strip item (proposed item 9).

* * * *

PROPOSED NEW ITEMS

8. Plates of iron or steel, hot or cold rolled, whether or not with sheared or rolled edges, of carbon steel or alloy steel or iron, polished or not, n.o.p.
   10 p.c. 15 p.c. 20 p.c.

(All items opposite to be cancelled)

EXISTING TARIFF ITEMS

380 Plates of iron or steel, hot or cold rolled:—
(a) Not more than 66 inches in width, n.o.p.
per ton $4.25 $8.00 $8.00
(b) More than 66 inches in width, n.o.p.
per ton Free $6.00 $6.00
(d) With chequer, diamond or other raised pattern on contact surface
per ton Free $8.00 $8.00

383 Plates of iron or steel:
(a) Coated with tin, of a class or kind not made in Canada, n.o.p.
Free 15 p.c. 15 p.c.
10 p.c.
(b) Coated with tin, n.o.p.
15 p.c. 15 p.c. 20 p.c.
(c) Coated with zinc, n.o.p.
7½ p.c. 20 p.c. 20 p.c.
17½ p.c.
(d) Coated with metal or metals, n.o.p.
5 p.c. 12½ p.c. 15 p.c.
10 p.c.

383 (e) Coated with paint, tar, asphaltum or otherwise coated, n.o.p.
5 p.c. 12½ p.c. 15 p.c.
(f) Coated with vitreous enamel, n.o.p.
10 p.c. 20 p.c. 25 p.c.
(g) Corrugated or pebbled, coated or not
10 p.c. 20 p.c. 25 p.c.

385 Plates of iron or steel, hot rolled, valued at not less than 5 cents per pound
Free 12½ p.c. 15 p.c.

385a Plates of rust, acid or heat resisting steels, hot or cold rolled, polished or not, valued at not less than 5 cents per pound
Free 20 p.c. 20 p.c.
12½ p.c.

386 Plates of iron or steel:
(a) Plates, when imported by manufacturers for use exclusively in the manufacture or repair of the pressure parts of boilers, pulp digesters, steam accumulators and vessels for the refining of oil, in their own factories
per ton Free $5.00 $5.00
(b) Plates for butts, hinges, typewriters, etc.
Free 7½ p.c. 10 p.c.

386 (c) Plates for agricultural implements
Free Free Free
(g) Plates, not tempered, for saws (Including ex. item—GATT)
Free Free Free
(h) Plates, tempered or ground, for saws (Including ex. item—GATT)
Free 10 p.c. 12½ p.c.
7½ p.c.

PROPOSED NEW ITEMS	EXISTING TARIFF ITEMS
	440f Plates for ships Free Free Free
	848 (4) Plates for oil and gas operations Free Free Free
	Drawback Items possibly affecting plate
	1005 Drawback of 99 p.c.
	1006 Drawback of 99 p.c.
	1009 Drawback of 60 p.c.
	1015 Drawback of 40 p.c.
	Proviso to 1015 Drawback of 99 p.c.
(No change proposed)	380 (c) Plates of iron or steel, hot rolled, flanged, dished or curved 5 p.c. 25 p.c. 30 p.c. 22½ p.c.
* * * *	* * * *
9. Sheets or strip, of carbon steel or of alloy steel or iron, whether or not with sheared or rolled edges, in lengths or coils: (a) Not further processed than hot rolled, n.o.p. 10 p.c. 15 p.c. 25 p.c. (b) Not further processed than pickled, cold rolled or cold drawn, polished or not, n.o.p. 12½ p.c. 17½ p.c. 35 p.c. (All items opposite to be cancelled)	381 Sheets, of iron or steel, hot or cold rolled:— (a) ·080 inch or less in thickness, n.o.p. 7½ p.c. 20 p.c. 20 p.c. (b) More than ·080 inch in thickness, n.o.p. per ton $4.25 $6.00 $7.00 382 Hoop, band or strip, of iron or steel: (a) Hot rolled, ·080 inch or less in thickness, n.o.p. 5 p.c. 15 p.c. 15 p.c. 12½ p.c. (b) Hot rolled, more than ·080 inch in thickness, n.o.p. per ton $3.00 $8.00 $8.00 7.00 (c) Cold rolled or cold drawn, ·080 inch or less in thickness, n.o.p. 7½ p.c. 20 p.c. 20 p.c. (d) Cold rolled or cold drawn, more than .080 inch in thickness, n.o.p. 12½ p.c. 27½ p.c. 30 p.c. 22½ p.c.
Note: Uncoated stock at present dutiable under item 383(g) would presumably be classified under existing item 446a "as manufactured articles" at 10 p.c. 27½ p.c. 35 p.c. 22½ p.c.	383 Sheets, hoop, band or strip, of iron or steel: (g) Corrugated or pebbled, (not coated) 10 p.c. 20 p.c. 25 p.c. 385 Sheets, hoop, band or strip, of iron or steel, hot rolled, valued at not less than five cents per pound, n.o.p. Free 12½ p.c. 15 p.c.
	385a Sheets, hoop, band or strip, of rust, acid or heat resisting steels, hot or cold rolled, polished or not, valued at not less than five cents per pound Free 20 p.c. 20 p.c. 12½ p.c.
	385c Sheets or strip, of iron or steel, hot or cold rolled, not more than .025 of an inch in thickness, containing not less than 2.90 per cent of silicon, coated or not, for use in the manufacture of electrical apparatus or parts of electrical apparatus Free Free 12½ p.c.

PROPOSED NEW ITEMS	EXISTING TARIFF ITEMS

386 Sheets, hoop, band or strip, of iron or steel, as hereunder defined, under regulations prescribed by the Minister:

(a) See "plate" item

(b) Sheets, hoop, band or strip, cold rolled, when imported by manufacturers for use exclusively in the manufacture of butts, hinges, typewriters or sewing machines, in their own factories
Free $7\frac{1}{2}$ p.c. 10 p.c.

(c) Sheets, hoop, band or strip, hot rolled, being mould boards, shares, cultivator or shoe shapes, plough plates, land sides or disc circles, when such rectangles, circles or sketches are cut to shape but not moulded, punched, polished or otherwise manufactured, when imported by manufacturers of agricultural implements for use exclusively in the manufacture of agricultural implements in their own factories
Free Free Free

(d) Sheets, hoop, band or strip, coated or not, polished or not, when imported by manufacturers of saddlery hardware and saddles for use exclusively in the manufacture of such articles, in their own factories
Free Free Free

(e) Sheets, hoop, band or strip, hot or cold rolled, when imported by manufacturers of shovels for use exclusively in the manufacture of shovels, in their own factories
per ton Free \$2.75 \$3.00

(f) Hoop, band or strip, hot or cold rolled or drawn, coated or not, when imported by manufacturers of mats for use exclusively in the manufacture of mats, in their own factories
Free 5 p.c. 5 p.c.

(g) Sheets, hoop, band or strip, not tempered or ground nor further manufactured than cut to shape, without indented edges, when imported by manufacturers of saws or straw cutters for use exclusively in the manufacture of saws or straw cutters, in their own factories
Free Free Free

Ex. GATT Free

(h) Sheets, hoop, band or strip, hardened, tempered or ground, not further manufactured than cut to shape, without indented edges, when imported by manufacturers of saws for use exclusively in the manufacture of saws, in their own factories
Free 10 p.c. $12\frac{1}{2}$ p.c.

Ex. GATT $7\frac{1}{2}$ p.c.

(i) Sheets, hoop, band or strip, when imported by manufactruers for use exclusively in the manufacture of buckle clasps, bedfasts, furniture casters, corset steels, clock springs, shoe shanks, phonograph motor springs or ball bearings, in their own factories
Free Free 5 p.c.

PROPOSED NEW ITEMS	EXISTING TARIFF ITEMS
	386 (j) Hoop, band or strip, being tagging metal, coated or not, when imported by manufacturers of shoe and corset laces for use exclusively in the manufacture of shoe and corset laces, in their own factories Free Free 5 p.c.
	(k) Sheets, hot or cold rolled, when imported by manufacturers of hollow-ware coated with vitreous enamel or of apparatus designed for cooking or for heating buildings, for use exclusively in the manufacture of hollow-ware coated with vitreous enamel or of vitreous-enamelled sheets for apparatus designed for cooking or for heating buildings Free 10 p.c. 12½ p.c.
	(l) Sheets, cold rolled, blue polished, when imported by manufacturers of apparatus designed for cooking or for heating buildings, for use exclusively in the manufacture of apparatus designed for cooking or for heating buildings, in their own factories Free 10 p.c. 12½ p.c.
	(m) (i) Sheets of iron or steel, cold rolled, when imported by manufacturers for use exclusively in the manufacture of sheets coated with tin Free 15 p.c. 15 p.c.
	(m) (ii) Sheets, hoop, band or strip, of iron or steel, hot rolled, when imported by manufacturers for use exclusively in the manufacture of sheets, hoop, band or strip, coated with zinc or other metal or metals, not including tin, in their own factories 5 p.c. 20 p.c. 17½ p.c. 20 p.c.
	(n) Hoop, band or strip, hot rolled, in coils not less than 100 feet in length, when imported by manufacturers for use exclusively in the manufacture of cold rolled iron or steel, in their own factories Free 5 p.c. 5 p.c.
	(p) Sheets or strip, of iron or steel, hot or cold rolled, with silicon content of .075 per centum or more, when imported by manufacturers of electrical apparatus or of parts therefor, for use in the manufacture of electrical apparatus or of parts therefor, in their own factories Free 12½ p.c. 12½ p.c.
	(q) Hoop steel, hot or cold rolled, plain or coated, .064 inch or less in thickness, not more than three inches in width, when imported by manufacturers of barrels or kegs or by manufacturers of flat hoops for barrels and kegs, for use exclusively in their own factories Free 12½ p.c. 12½ p.c.
	(r) Sheets or strip, cold rolled, when imported by manufacturers of pipes and tubes for use exclusively in the manufacture of pipes and tubes in their own factories, under regulations prescribed by the Minister Free 5 p.c. 5 p.c.

PROPOSED NEW ITEMS	EXISTING TARIFF ITEMS
	386 (u) Hoop, band or strip, of steel of Bessemer quality, when imported by manufacturers of hinges, for use exclusively in the manufacture of hinges, in their own factories. per ton Free $4.00 $8.00
	386b Sheet and strip of iron or steel, hot rolled, in coils or otherwise, when imported by manufacturers to be cold rolled or cold reduced and used exclusively in the manufacture of sheets or strip coated with tin Free Free –
	438f Hot rolled strip of iron or steel with rolled or mill edge, of a class or kind not made in Canada, when imported for use in the importers' own factory, in the manufacture of the goods enumerated in tariff items 424 and 438a, or in the manufacture of parts therefor per ton Free Free $8.00
	440f Sheets of iron or steel for shipbuilding and repairs Free Free Free
(No change proposed)	385a Ex. Electric resistance strip, ribbon, wire, and wire cold rolled after drawing, containing from 19 per cent to 26 per cent chromium, and 3 per cent to 7 per cent aluminum, ·5 per cent to 4 per cent cobalt, and remainder iron – Free –
(No change proposed)	385b Stainless steels in primary mill forms, of a class or kind not made in Canada, manufactured from Canadian made ingots, blooms or slabs imported by the Canadian manufacturers of such ingots, blooms or slabs for use in Canadian manufactures per ton $5.00 $10.00 $20.00
(No change proposed)	386(g) Ex. Sheets, hoop, band or strip, not tempered or ground nor further manufactured than cut to shape, without indented edges, when imported for use exclusively in the manufacture of saws or straw cutters – Free –
(No change proposed)	386(t) Welded strip steel not tempered, nor further manufactured than cut to shape and beading removed, without indented edges, for use in the manufacture of saw blades Free Free Free
(No change proposed)	848 (4) (Steel for pipes and tubes for defined purpose) Free Free Free
(c) Hot or cold rolled, coated with metal or metals, paint, tar, asphaltum, vitreous enamel or any other substance or substances, n.o.p., corrugated or not 12½ p.c. 17½ p.c. 35 p.c. (All items opposite to be cancelled)	383 Sheets, hoop, band or strip, of iron or steel: (c) Coated with zinc, n.o.p. 7½ p.c. 20 p.c. 20 p.c. 17½ p.c. (d) Coated with metal or metals, n.o.p. 5 p.c. 12½ p.c. 15 p.c. 10 p.c. (e) Coated with paint, tar, asphaltum or otherwise coated, n.o.p. 5 p.c. 12½ p.c. 15 p.c. (f) Coated with vitreous enamel, n.o.p. 10 p.c. 20 p.c. 25 p.c. (g) Corrugated or pebbled, (coated) 10 p.c. 20 p.c. 25 p.c.

PROPOSED NEW ITEMS	EXISTING TARIFF ITEMS
	385c (See this item above)
	386(c) (See this item above)
	386(d) (See this item above)
	386(f) (See this item above)
	386(j) (See this item above)
	386(q) (See this item above)
	384a (Hoop steel, coated, for the manufacture of hoops for barrels) Free Free $12\frac{1}{2}$ p.c.
(d) Hot or cold rolled, coated with tin, or with an alloy of lead and tin 15 p.c. 15 p.c. 20 p.c. (All items opposite to be cancelled)	383 Sheets, hoop, band or strip, of iron or steel: (a) Coated with tin, of a class or kind not made in Canada, n.o.p. Free 15 p.c. 15 p.c. 10 p.c. (b) Coated with tin, n.o.p. 15 p.c. 15 p.c. 20 p.c.
	386e Sheets of iron or steel, coated with an alloy of lead and tin, for use in Canadian manufactures Free 5 p.c. 15 p.c.
	1045 (Steel sheets, hot or cold rolled or coated with lead or with lead and tin . . . for the manufacture of stampings for automobiles) Drawback of 99 p.c.
	1045a (Steel sheets, similarly coated, of certain dimensions for the manufacture of stampings for automobiles) Drawback of 99 p.c.
(e) Cold rolled strip in coils, electro-galvanized, 6 inches or less in width, of a class or kind not made in Canada Free $7\frac{1}{2}$ p.c. $7\frac{1}{2}$ p.c. (All items opposite to be cancelled)	386 (o) Hoop, band or strip, cold rolled, electro-galvanized, six inches or less in width, in coils of not less than 100 feet, when imported by manufacturers for use exclusively in the manufacture of rolling doors of steel, in their own factories Free $7\frac{1}{2}$ p.c. $7\frac{1}{2}$ p.c. (s) Strip, of iron or steel, cold rolled, tempered or not, electro-galvanized, $2\frac{1}{4}$ inches or less in width, .080 inch or less in thickness, in coils of not less than 100 feet, for use in the manufacture of metal belting or flexible metal hose Free $7\frac{1}{2}$ p.c. 20 p.c.
	383 (c) Sheets, etc., coated with zinc, n.o.p. $7\frac{1}{2}$ p.c. 20 p.c. 20 p.c. $17\frac{1}{2}$ p.c.
(f) Hot rolled tight cooperage steel, with rolled or mill edge, not over .064 inch in thickness, not over 3 inches in width, of a class or kind not made in Canada Free $7\frac{1}{2}$ p.c. 20 p.c. (All items opposite to be cancelled)	386 (q) Hoop steel, hot or cold rolled, plain or coated, .064 inch or less in thickness, not more than three inches in width, when imported by manufacturers of barrels or kegs or by manufacturers of flat hoops for barrels and kegs, for use exclusively in their own factories Free $12\frac{1}{2}$ p.c. $12\frac{1}{2}$ p.c.
	384a Hoop steel, hot rolled, with mill or rolled edges, plain or coated, .0972 inch or less in thickness, not more than three inches in width, for use in the manufacture of hoops for barrels or kegs Free Free $12\frac{1}{2}$ p.c.

PROPOSED NEW ITEMS	EXISTING TARIFF ITEMS
	Drawback Items In so far as these items refer to sheets, band, hoop or strip
	1005 Drawback of 99 p.c.
	1006 Drawback of 99 p.c.
	1007 Drawback of 99 p.c.
	1009 Drawback of 60 p.c.
	1015 Drawback of 40 p.c.
	Proviso to 1015 Drawback of 99 p.c.
	1045 Drawback of 99 p.c.
	1045a Drawback of 99 p.c.
* * * *	* * * *
10. Forgings of iron or carbon steel or alloy steel, in any degree of manufacture, viz.: Solid forgings, over 80,000 pounds in weight, or over 65 feet in length, or over 70 inches in diameter; solid forgings, machine bored, over 60,000 pounds in weight, or over 65 feet in length, or over 70 inches external diameter; hollow-forged forgings, over 40,000 pounds in weight, or over 72 inches in length, or over 84 inches in internal diameter Free 15 p.c. 30 p.c.	392 Forgings, of iron or steel, in any degree of manufacture, n.o.p. (To extent affected) $17\frac{1}{2}$ p.c. $27\frac{1}{2}$ p.c. 30 p.c. $22\frac{1}{2}$ p.c. 392a Forgings of iron or steel, in any degree of manufacture, hollow, machined or not, not less than 12 inches in internal diameter; and all other forgings, solid or otherwise, in any degree of manufacture, rough turned or rough machined or not, of a weight of 20 tons or over (To be cancelled) Free 15 p.c. 30 p.c.
(No change proposed)	392b Forgings of steel, rough machined and fitted or not, and handles of steel or of metal alloy in the rough, when imported by manufacturers of surgical and dental instruments for use in the manufacture of such instruments in their own factories Free Free 30 p.c.
(No change proposed)	392c Forged golf club heads of iron or steel, with or without face or similar marking, but not ground, polished, plated or otherwise finished 10 p.c. 10 p.c. 30 p.c.
* * * *	* * * *
11. Upon any article or commodity enumerated in (proposed tariff items 2(a), 2(b), 5, 6, and existing items 378b* and 378c*) of this Schedule, there shall be levied, collected and paid, under regulations prescribed by the Minister, in addition to the rates of Customs duties enumerated in such said tariff items, an ad valorem surtax of five per centum when any such said article or commodity contains any one or more of the following: (a) Vanadium, 0·15 per centum or more, by weight. (b) Molybdenum, 0·15 per centum or more, by weight. (c) Nickel, 0·4 per centum or more, by weight. (d) Chromium, 0·4 per centum or more, by weight.	389 Upon any article or commodity enumerated in tariff items 377, 377a, 378a, 378b, 378c, 388a, 388b, and 388c of this Schedule not being of greater value than $6\frac{1}{2}$ cents per pound, there shall be levied, collected and paid, under regulations prescribed by the Minister, in addition to the rates of Customs duties enumerated in such said tariff items, an ad valorem surtax of five per centum when any such said article or commodity contains any one or more of the following: (a) Vanadium, 0·15 per centum or more, by weight. (b) Molybdenum, 0·15 per centum or more, by weight. (c) Nickel, 0·4 per centum or more, by weight. (d) Chromium, 0·4 per centum, or more by weight.

PROPOSED NEW ITEMS	EXISTING TARIFF ITEMS
(e) Tungsten, 0·4 per centum or more, by weight.	(e) Tungsten, 0·4 per centum or more, by weight.
(f) Cobalt, 0·4 per centum or more, by weight.	(f) Cobalt, 0·4 per centum or more, by weight.
(g) Manganese, 1·0 per centum or more, by weight.	(g) Manganese, 1·0 per centum or more, by weight.
(h) Silicon, 1·0 per centum or more, by weight.	(h) Silicon, 1·0 per centum or more, by weight.
(i) Any other element, not being iron or carbon, in excess of ·5 per centum by weight.	(i) Any other element, not being iron or carbon, in excess of ·5 per centum by weight.
(*) These two existing items unchanged by basic steel producers proposals.	
NOTE: It should be noted that proposed item 11 would cover a considerably wider field than existing item 389. This results from the fact that the proposed items enumerated in item 11 would replace not only the existing items enumerated in item 389, but also other existing items not at present enumerated in item 389.	

Addendum: The following existing Tariff Items, named in the letter of reference from the Minister of Finance, were not shown in the draft Schedule prepared for public sittings for the reason that they were not included in the proposals by the Industry: items 441c, 442, 442b, 442c and 458.

STATISTICS OF IMPORTS, EXPORTS AND PRODUCTION OF BASIC IRON AND STEEL PRODUCTS

1. The following import statistics, originating in two Dominion Bureau of Statistics publications—"Trade of Canada" and "Primary Iron and Steel", are compiled on two bases, i.e.:
   (a) the existing Canadian Customs Tariff definitions showing imports under each tariff item;
   (b) the American Iron and Steel Institute's (AISI) definitions as applied by the D.B.S.

2. Since the coverage of the Canadian Customs Tariff definitions and the tariff items often differs from the AISI definitions, the two sets of import statistics are often not comparable.

3. The D.B.S. production statistics are compiled on the basis of the AISI definitions. They are therefore comparable to the import statistics compiled on the AISI definitions, but not to the import statistics compiled on the basis of the Customs Tariff definitions.

4. The D.B.S. import figures on the AISI basis are often shown in greater detail than the production figures. It therefore has been necessary to consolidate groups of import figures in order to relate them to production.

5. Under the provisions of the Statistics Act it is not permissible to disclose production statistics in instances where there are less than three producers. As a result, no production data are shown for tin-plate and certain other items.

6. Imports for 1937 on the Canadian Customs Definition basis are for the fiscal year ending March 31, 1937.

7. The Dominion Bureau of Statistics does not show import or production figures for the following tariff items: 384a, 385a ex, 385b, 385c, 386(g) ex, 386(h) ex, 386(s), 386(t), 458, 848(4).

Imports: based on Canadian Customs Definitions

Tariff Item 374, Pig iron, n.o.p.
(s.c. 5012) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	534	6,677	8,969	1,829	1,527	9,705	7,338	12,082
Belgium and Luxembourg	—	—	—	1,436	—	110	—	—
Germany	—	—	11,032	14,767	—	—	—	—
United Kingdom	5,823	—	5,890	—	—	—	4,602	1,746
Others	2	303	682	4,094	138	13,451	7,045	335
Total	6,359	6,980	26,573	22,126	1,665	23,266	18,985	14,163

NOTE: In 1950 and again in 1954, 112 tons entered duty free. In 1955, 55 tons entered duty free.
See following sheet for imports of pig iron under item 442 for the manufacture of farm machinery.

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	1. Imports	2. Production	Total of 1+2	Imports as Percentage of Total
1937	6,371	1,006,718	1,013,089	0.63
1948	7,370	2,125,739	2,133,109	0.35
1950	30,560	2,317,121	2,347,681	1.30
1951	14,554	2,552,893	2,567,447	0.57
1952	1,584	2,681,585	2,683,169	0.06
1953	25,057	3,012,268	3,037,325	0.82
1954	18,609	2,211,029	2,229,638	0.83
1955	12,386	3,213,764	3,226,150	0·38

Imports: based on Canadian Customs Definitions

Tariff Item 442, Imports of pig iron for the manufacture of farm machinery.
(s.c. 5011) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	27	398	1,841	—	—	2,218	922	300
Germany	—	—	1,102	—	—	—	—	—
Total	27	398	2,943	—	—	2,218	922	300

Imports and Production: based on AISI Definitions

Imports and production of pig iron for the manufacture of agricultural implements not separately shown in AISI breakdown. For total production of pig iron see item 374.

Exports of Pig Iron

(tons of 2000 lbs.)

To:	1937	1948	1950	1952	1954
United Kingdom	5,070	—	—	88,635	—
U.S.A.	16,282	662	194,528	287,141	202,597
Others	—	—	—	211	6
Total	21,352	662	194,528	375,987	202,603

Imports: based on Canadian Customs Definitions

Tariff Item 376, Sponge iron.
(s.c. 5024) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	—	—	10	44	6	9	118	425
Others	85	—	—	—	—	—	—	—
Total	85	—	10	44	6	9	118	425

Imports and Production: based on AISI Definitions

not available

Imports: based on Canadian Customs Definitions

Tariff Item 377, Ingots; 377c, Ingots, cogged ingots, blooms, slabs, billets, of a class or kind not made in Canada, for the manufacture of forgings; 442, Ingots for the manufacture of farm machinery.
(s.c. 5022) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	998	1,291	2,941	50,048	38,830	1,845	992	998
Total	998	1,291	2,941	50,048	38,830	1,845	992	998

NOTE: Duty free imports under item 442: 1950—3,095 tons; 1951—12,845 tons; 1952—2,359 tons; 1953—13 tons; 1954—87 tons; 1955—116 tons.

Imports and Production: based on AISI Definitions

Ingots only—see item 377a for semi-finished rolled forms

(tons of 2000 lbs.)

	1. Imports	2. Production	Total of 1+2	Imports as Percentage of Total
1937	—	1,496,575	—	—
1948	37,700	3,087,063	3,124,763	1.20
1950	8,116	3,298,071	3,306,187	0.25
1951	89,883	3,447,132	3,537,015	2.54
1952	76,945	3,577,758	3,654,703	2.10
1953	1,967	4,009,548	4,011,515	.05
1954	1,791	3,113,791	3,115,582	.06
1955	2,367	4,441,743	4,444,110	·05

Imports: based on Canadian Customs Definitions

Tariff Item 377a, Blooms, cogged ingots, slabs, billets, n.o.p., sheet bars, n.o.p.
(s.c. 5020) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	3,265	9	12	4	1	58	102	52
U.S.A.	4,265	14,495	3,118	5,060	13,896	5,075	1,691	403
Others	6	2	—	—	—	—	1	—
Total	7,536	14,506	3,130	5,064	13,897	5,133	1,794	455

NOTE: Duty free imports: 1948—8,405 tons; 1949—18,672 tons; 1950—1,001 tons.

Imports and Production: based on AISI Definitions

Blooms, billets, slabs, sheet bars, axle blanks and blanks or pierced billets for seamless tubes

(tons of 2000 lbs.)

	1. Imports	2. Production	Total of 1+2	Imports as Percentage of Total
1937	—	1,443,979	—	—
1948	14,756	2,313,619	2,328,375	0.63
1950	3,257	2,446,884	2,450,141	0.13
1951	5,798	2,645,540	2,651,338	0.22
1952	12,957	2,729,432	2,742,389	0.47
1953	2,215	2,870,860	2,873,075	0.07
1954	4,193	2,273,725	2,277,918	0.18
1955	1,784	2,942,725	2,944,509	0·06

Exports of Billets, Ingots and Blooms of Iron and Steel

(tons of 2000 lbs.)

To:	1937	1948	1950	1952	1954
United Kingdom	—	17,683	—	19,636	—
U.S.A.	—	15,408	169,948	36,450	2,588
Others	—	2,682	512	241	2,758
Total	—	35,773	170,460	56,327	5,346

Imports: based on Canadian Customs Definitions

Tariff Item 377b, Ingots, cogged ingots, blooms, slabs, billets, n.o.p. valued at not less than 3 cents per pound when imported by manufacturers of steel for the manufacture of steel.
(s.c. 5021) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	—	—	—	5	—	—	1	—
U.S.A.	163	28,338	15,390	51,017	90,280	21,279	1,659	2,182
Others	28	—	112	—	—	111	999	13
Total	191	28,338	15,502	51,022	90,280	21,390	2,659	2,195

Imports and Production: based on AISI Definitions

Included under items 377 and 377a

Imports: based on Canadian Customs Definitions

Tariff Item 377d, Billets of Bessemer steel for the manufacture of seamless steel tubes.
(s.c. 5019)

Source	1937	1948	1950	1951	1952	1953	1954	1955
	nil	nil	nil	nil	nil	nil	nil	nil

Imports and Production: based on AISI Definitions

not available

Imports: based on Canadian Customs Definitions

Tariff Item 377e, Wrought or puddled iron.
(s.c. 5152) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	—	22	—	363	—	—	—	—
Total	—	22	—	363	—	—	—	—

Imports and Production: based on AISI Definitions

not available

Imports: based on Canadian Customs Definitions

Tariff Item 387, Railway rails, of any weight, for any purpose.
(s.c. 5078) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	—	—	18,788	4,398	759	877	8,429	12,910
U.S.A.	10,105	2,630	6,571	5,447	7,281	8,136	5,230	7,490
Belgium and Luxembourg	990	—	947	1,625	1,069	790	676	639
Germany	—	—	—	441	33	60	158	77
Others	—	—	—	66	108	27	—	158
Total	11,095	2,630	26,306	11,977	9,250	9,890	14,493	21,274

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	1. Imports	2. Production	Total of 1+2	Imports as Percentage of Total
1937	—	86,932	—	—
1948	4,962	337,244	342,206	1.47
1950	17,875	286,672	304,547	5.86
1951	11,646	257,244	268,890	4.33
1952	8,369	253,675	262,044	3.19
1953	8,576	303,318	311,894	2.75
1954	12,852	241,922	254,774	5.01
1955	17,393	228,991	246,384	7·05

Exports of Rails, Railway, of Iron and Steel

(tons of 2000 lbs.)

To:	1937	1948	1950	1952	1954
Br. South Africa	42,186	—	—	—	—
U.S.A.	1,570	2,747	1,452	881	74
Union of South Africa	—	22,418	10,939	—	—
Others	810	134,226	—	1,714	1,421
Total	44,566	159,391	12,391	2,595	1,495

Imports: based on Canadian Customs Definitions

Tariff Item 387c, Rails, grooved, for electric tramways.
(s.c. 5079) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	1,462	3,766	859	1,642	1,560	54	470	510
Total	1,462	3,766	859	1,642	1,560	54	470	510

Imports and Production: based on AISI Definitions

Included under item 387

Imports: based on Canadian Customs Definitions

Tariff Item 388, Angles, beams, channels, columns, girders. joists, tees, zees, piling, and other shapes, hot rolled, weighing not less than 35 pounds per lineal yard, n.o.p.

(s.c. 5161) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	4,091	365	8,953	19,338	10,234	5,463	11,126	5,481
U.S.A.	39,308	120,084	113,432	137,113	109,023	153,791	213,079	198,170
Belgium and Luxembourg	3,063	1,531	11,658	42,482	38,285	24,011	11,835	20,161
Germany	—	—	—	579	63	166	2,411	1,286
Others	4	—	82	4,324	2,276	3,828	10,848	8,359
Total	46,466	121,980	134,125	203,836	159,881	187,259	249,299	233,457

NOTE: Duty free imports under the MFN tariff· 1948—653 tons; 1949—397 tons; 1950—63 tons; 1951—111 tons; 1952—338 tons: 1953—131 tons; 1954—550 tons; 1955—7,941.

Imports and Production: based on AISI Definitions

All Structural Steel
(tons of 2000 lbs.)

	1. Imports	2. Production	Total of 1+2	Imports as Percentage of Total
1937	—	—	—	—
1948	185,032	192,253*	377,285	49.04
1950	164,805	153,144*	317,949	51.83
1951	333,498	245,270	578,768	57.62
1952	280,023	231,091	511,114	54.79
1953	272,533	283,203	555,736	49.04
1954	288,848	193,673	482,521	59.86
1955	300,500	236,698	537,198	55·93

* Does not include light structurals, which are with hot rolled bars

Imports: based on Canadian Customs Definitions

Tariff Item 388a, I-beams, up to and including 6 inches in depth, channels, up to and including 7 inches in depth, angles, up to and including 6 inches by 6 inches, zees, up to and including 6 inches in depth of web.

(s.c. 5167) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	445	4	466	2,080	919	2,741	480	299
U.S.A.	996	9,538	2,643	9,363	9,453	8,191	6,874	9,322
Belgium and Luxembourg	199	—	652	3,827	3,378	3,790	621	1,048
Others	—	—	27	2,018	640	752	625	421
Total	1,640	9,542	3,788	17,288	14,390	15,474	8,600	11,090

NOTE: Duty free imports under MFN tariff: 1952—18 tons.

Imports and Production: based on AISI Definitions

Included under item 388

Imports: based on Canadian Customs Definitions

Tariff Item 388b, Angles, beams, channels, columns, girders, joists, tees, zees, piling, and other shapes, n.o.p.
(s.c. 5162) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	627	172	3,809	11,900	3,452	1,920	909	1,315
U.S.A.	6,002	39,635	17,724	53,262	53,743	40,879	26,465	38,783
Germany	11	—	31	4,311	569	186	700	647
Belgium and Luxembourg	1,855	1,504	8,274	32,499	49,331	24,269	18,540	25,338
Others	24	—	364	9,271	10,105	3,699	8,424	14,387
Total	8,519	41,311	30,202	111,243	117,200	70,953	55,038	80,470

NOTE: Duty free imports: 1948—7,459 tons; 1949—5,702 tons; 1950—1,493 tons; 1951—6,769 tons; 1952—8,017 tons; 1953—2,320 tons; 1954—1,651 tons; 1955—1,666 tons.

Imports and Production: based on AISI Definitions

Included under item 388

Imports: based on Canadian Customs Definitions

Tariff Item 388c, Beams or joists, hot rolled, weighing less than 5½ pounds per lineal yard.
(s.c. 5164) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	203	1,028	2,076	2,323	2,429	3,207	6,246	5,310
Others	—	—	—	—	57	10	3	15
Total	203	1,028	2,076	2,323	2,486	3,217	6,249	5,325

Imports and Production: based on AISI Definitions

Included under item 388

Imports: based on Canadian Customs Definitions

Tariff Item 388e, Side or centre sill sections, for railway cars.
(s.c. 5168) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	4	—	—	—	—	—	—	—
Belgium	11	—	—	—	—	—	—	—
Total	15	—	—	—	—	—	—	—

Imports and Production: based on AISI Definitions

Included under item 388

Exports of Structural Steel

(tons of 2000 lbs.)

To:	1937	1948	1950	1952	1954
United Kingdom	554	—	107	—	—
New Zealand	258	13	22	35	4
China	—	7,973	—	—	—
Others	614	2,520	2,062	6,527	983
Total	1,426	10,506	2,191	6,562	987

Imports: based on Canadian Customs Definitions

Tariff Item 377f, Bars or rods, hot rolled, viz : rounds over $4\frac{7}{8}$ inches in diameter, and squares over 4 inches.

(s.c. 5081) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	165	94	676	462	641	1,065	678	472
U.S.A.	641	1,151	711	969	984	1,328	1,159	1,214
Belgium and Luxembourg	—	—	—	12	67	60	42	—
Germany	—	—	—	—	—	27	9	—
Other	—	—	—	—	—	—	—	8
Total	806	1,245	1,387	1,443	1,692	2,480	1,888	1,694

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	Imports	
1937	—	
1948	1,320	
1950	1,500	Production included with billets under item 377a
1951	1,212	
1952	1,892	
1953	2,167	
1954	1,740	
1955	1,628	

Imports: based on Canadian Customs Definitions

Tariff Item 378(a), Bars, rods; billets weighing less than 60 pounds, hot rolled, n.o.p.

(s.c. 5071) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	1,231	79	2,519	552	88	553	1,129	—
U.S.A.	21,478	21,813	368	772	2,332	338	1,298	1,045
Belgium and Luxembourg	2,007	199	5,882	2,498	1	1,487	4,170	483
Germany	—	—	56	605	—	33	22	—
Others	93	—	343	810	886	512	1,177	303
Total	24,809	22,091	9,168	5,237	3,307	2,923	7,796	1,831

NOTE: Duty free imports: 1951—84 tons.

Imports and Production: based on AISI Definitions

Bars and Sections. Hot Rolled
(tons of 2000 lbs.)

	1. Imports	2. Production	Total of 1+2	Imports as Percentage of Total
1937	—	388,662*	—	—
1948	77,498	634,315*	711,813	10.88
1950	53,260	684,934*	738,194	7.21
1951	154,121	763,005	917,126	16·80
1952	151,942	786,972	938,914	16.18
1953	79,638	732,275	811,913	9.81
1954	58,002	528,521	586,523	9.89
1955	83,677	708,494	792,171	10·56

* Includes light weight structural bars sizes in 1937, 1948 and 1950.

Imports: based on Canadian Customs Definitions

Tariff Item 378(b), Bars and rods; billets weighing less than 60 pounds per lineal yard, not further processed than hammered or pressed, n.o.p.

(s.c. 5074) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom......	—	—	—	58	63	28	4	13
U.S.A................	67	81	41	74	77	48	61	59
Others................	—	—	—	—	—	11	160	1
Total.............	67	81	41	132	140	87	225	73

NOTE: Duty free entries: 1948—2 tons.

Imports and Production: based on AISI Definitions

Included under item 378a

Imports: based on Canadian Customs Definitions

Tariff Item 378(c), Bars and rods; billets weighing less than 60 pounds per lineal yard, cold rolled, drawn, reeled, turned or ground, n.o.p.

(s.c. 5072) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom..............	1,243	76	3,282	3,842	2,118	2,150	1,401	1,897
U.S.A.........................	2,373	4,555	4,239	5,044	7,206	7,553	4,438	7,650
Germany......................	—	4	—	1,019	541	—	37	7
Belgium and Luxembourg......	928	—	—	279	663	374	248	546
Others........................	—	—	—	451	1,819	138	574	43
Total......................	4,544	4,635	7,521	10,635	12,347	10,215	6,698	10,143

NOTE: Duty free entries: 1948—95 tons; 1950—31 tons; 1951—4 tons; 1952—5 tons; 1953—12 tons; 1954—3 tons.

Imports and Production: based on AISI Definitions

Bars and Sections, Cold Rolled

(tons of 2000 lbs.)

	1. Imports	2. Production	Total of 1+2	Imports as Percentage of Total
1937..........................	—	16,834	—	—
1948..........................	13,749	34,791	48,540	28.31
1950..........................	13,104	34,318	47,422	27.63
1951..........................	16,830	47,359	64,189	26.21
1952..........................	16,731	50,545	67,276	24.87
1953..........................	13,549	45,954	59,503	22.77
1954..........................	8,502	28,651	37,153	22.88
1955..........................	12,378	45,262	57,640	21·47

Imports: based on Canadian Customs Definitions

Tariff Item 378(d), Bars and rods; billets weighing less than 60 pounds per lineal yard, hot rolled, valued at not less than 4 cents per pound.

(s.c. 5073) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom......	2,711	1,219	3,251	10,880	6,019	4,064	3,388	3,209
U.S.A................	2,314	27,449	26,007	54,561	59,283	49,480	24,017	39,007
Belgium...............	—	2,426	268	25,352	19,326	4,352	1,816	4,386
Others................	1,961	21	101	20,964	8,666	806	170	628
Total.................	6,986	31,115	29,627	111,757	93,294	58,702	29,391	47,230

NOTE: Duty free entries: 1948—137 tons; 1950—27 tons; 1951—40 tons; 1952—96 tons; 1953—19 tons; 1954—9 tons; 1955—18 tons

Imports and Production: based on AISI Definitions

Included under item 378a

Imports: based on Canadian Customs Definitions

Tariff Item 379(a), Rods, hot rolled, for horseshoe nails.
(s.c. 5101) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	55	—	—	—	—	—	—	—
Total	55	—	—	—	—	—	—	—

Imports and Production: based on AISI Definitions

Included under item 378a

Imports: based on Canadian Customs Definitions

Tariff Item 379(b), Rods, hot rolled, in the coil, or bars $1\frac{1}{8}$ inches in diameter and over, for chain.
(s.c. 5102) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	5	—	—	—	—	—	68	90
Belgium	—	—	—	—	28	34	32	—
Others	—	—	—	—	88	—	—	—
Total	5	—	—	—	116	34	100	90

Imports and Production: based on AISI Definitions

Included under item 378a

Imports: based on Canadian Customs Definitions

Tariff Item 442, Bars or rods for farm machinery.
(s.c. 5077) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	2,873	37,049	37,060	39,999	42,314	17,279	5,756	12,978
United Kingdom	—	—	—	684	272	17	—	—
Others	—	—	—	484	—	—	—	3
Total	2,873	37,049	37,060	41,167	42,586	17,296	5,756	12,981

Imports and Production: based on AISI Definitions

Hot and Cold Rolled Bars and Rods for Farm Machinery
(tons of 2000 lbs.)

	Imports*	
1937	—	
1948	29,365	
1950	13,019	
1951	28,107	Production included in figures for (a) hot rolled bars and (b) cold rolled bars
1952	28,561	
1953	11,340	
1954	4,841	
1955	10,605	

* These imports are also incorporated into the import statistics for (a) hot rolled bars and (b) cold rolled bars.

Imports: based on Canadian Customs Definitions

Tariff Item 379(c), Bars for the manufacture of shovels; 386(e), Sheets and plates for the manufacture of shovels.
(s.c. 5076) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	536	181	110	315	1,631	578	—	—
Total	536	181	110	315	1,631	578	—	—

Imports and Production: based on AISI Definitions

Included in figures for bars, sheets and plate

Imports: based on Canadian Customs Definitions

Tariff Item 379(d), Rods, hot rolled, in the coil, not over .375 inch in diameter, for wire.
(s.c. 5103) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	—	—	561	422	224	2,106	3,701	1,668
U.S.A.	752	869	437	709	2,023	2,294	520	891
Belgium and Luxembourg	1,514	—	2,035	2,824	2,586	2,876	1,102	—
Germany	—	—	381	2,012	364	2,566	3,343	4,108
Others	118	—	100	2,355	—	173	—	15
Total	2,384	869	3,514	8,322	5,197	10,015	8,666	6,682

Imports and Production: based on AISI Definitions

Wire rods No. 5 gauge (0.2 inch) to 47/64 inch (0.73 inch) in diameter
(tons of 2000 lbs.)

	Imports*	Production†
1937	—	242,094
1948	870	286,990
1950	3,299	293,866
1951	7,989	318,266
1952	5,555	315,789
1953	11,486	286,471
1954	9,877	275,121
1955	7,007	357,775

* Not over .375 inch in diameter.
† Production includes rods from 0.2 to 0.73 inch in diameter.
The imports and production statistics are thus not on a strictly comparable basis.

Imports: based on Canadian Customs Definitions

Tariff Item 379(e), Bars, 5 inches or more in diameter, for polished shafting.
(s.c. 5075) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	3	—	—	—	—	—	—	—
Sweden	2	—	—	—	—	—	—	—
Total	5	—	—	—	—	—	—	—

Imports and Production: based on AISI Definitions

Included under items 378a and 378c

Summary No. I*—Bars and Rods—Hot Rolled (AISI)

(tons of 2000 lbs.)

	1. Imports	2. Production	Total of 1+2	Imports as Percentage of Total
1937	—	630,756	—	—
1948	78,368	921,305	999,673	7.84
1950	56,559	978,800	1,035,359	5.46
1951	162,110	1,081,271	1,243,381	13.04
1952	157,497	1,102,761	1,260,258	12.50
1953	91,124	1,018,746	1,109,870	8.21
1954	67,879	803,642	871,521	7.79
1955	90,684	1,066,269	1,156,953	7·83

* Includes imports and production covered by tariff items 378(a), 378(b), 378(d), 379(a), 379(b), 442, 379(d) and 379(e).

Exports of Bars and Rods

A. Bars

(tons of 2000 lbs.)

To:	1937	1948	1950	1952	1954
United Kingdom	45	5,862	40	6,210	151
U.S.A.	25	6,124	11,271	9,980	1,428
Others	4,548	34,835	4,008	13,862	3,052
Total	4,618	46,821	15,319	30,052	4,631
B. Rods					
United Kingdom	40,694	5	—	—	—
U.S.A.	—	466	148	470	40
Others	64	1,752	148	41	533
Total	40,758	2,223	296	511	573

Imports: based on Canadian Customs Definitions

Tariff Item 388f, Sash, casement or frame sections.
(s.c. 5166) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	244	162	125	100	—	161	264	395
U.S.A.	525	2,585	2,139	3,707	2,151	3,451	2,428	2,393
Belgium	—	11	81	355	182	112	53	139
Others	—	—	—	—	45	22	—	—
Total	769	2,758	2,345	4,162	2,378	3,746	2,745	2,927

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	Imports	
1937	—	
1948	3,154	Production included with figures for bars and strip
1950	1,997	
1951	4,224	
1952	2,053	
1953	3,835	
1954	2,715	
1955	2,952	

Imports: based on Canadian Customs Definitions

Tariff Item 384, Skelp, hot rolled, for pipes and tubes.
(s.c. 5149) (tons of 2000 lbs.)
(s.c. 5150)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom......	1,066	—	22,650	20,619	2,947	5,669	—	—
U.S.A..................	83,483	51,289	118,839	109,724	120,248	91,859	49,173	81,877
Belgium...............	13,989	9,786	25,427	14,727	12,648	13,478	8,420	1,653
Germany.............	—	—	—	110	220	7	2,252	1,494
Others.................	23	—	198	2,111	1,637	2,746	—	—
Total.............	98,561	61,075	167,114	147,291	137,700	113,759	59,845	85,024

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	Imports
1937.........................	—
1948.........................	60,392
1950.........................	163,900
1951.........................	141,031
1952.........................	136,508
1953.........................	121,498
1954.........................	66,292
1955.........................	91,790

Imports: based on Canadian Customs Definitions

Tariff Item 380(a), Plates, hot or cold rolled, not more than 66 inches in width, n.o.p.
(s.c. 5121) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom......	2,135	161	11,885	8,214	91	2,285	1,928	1,031
U.S.A..................	2,578	14,895	6,793	18,479	36,267	16,918	8,273	6,792
Others.................	175	—	4,350	3,374	5,405	2,758	1,068	6,396
Total.............	4,888	15,056	23,028	30,067	41,763	21,961	11,269	14,219

Note: Duty free imports: 1948—298 tons; 1950—229 tons; 1951—81 tons; 1952—392 tons; 1953—183 tons; 1954—31 tons.

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	Imports	
	Plate, 78 inches or less in width	
1937.....................	—	
1948.....................	33,486	Production included in Summary No. II
1950.....................	51,683	
1951.....................	134,898	
1952.....................	159,367	
1953.....................	82,546	
1954.....................	49,860	
1955.....................	75,496	

Imports: based on Canadian Customs Definitions

Tariff Item 380(b), Plates, hot or cold rolled, more than 66 inches in width, n.o.p.
(s.c. 5122)
(s.c. 5154) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom......	5,386	3,195	37,723	37,910	2,098	5,424	19,266	11,388
U.S.A..................	9,531	18,077	16,868	26,852	53,989	40,238	29,196	27,015
Others.................	11	—	717	1,117	3,629	4,556	1,995	9,674
Total..............	14,928	21,272	55,308	65,879	59,716	50,218	50,457	48,077

NOTE: Duty free imports under the MFN tariff: 1948—83 tons; 1950—1 ton; 1951—48 tons; 1952—73 tons; 1953—62 tons; 1954—nil; 1955—169 tons.

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	Imports		
	Over 78 and under 100 inches wide	100 inches or wider	
1937*..........................	—	—	
1948..........................	12,635	5,800	Production included in Summary No. II
1950..........................	37,598	4,366	
1951..........................	54,105	7,174	
1952..........................	67,573	7,646	
1953..........................	51,339	6,451	
1954..........................	33,793	6,441	
1955..........................	32,265	7,563	

*Imports for 1937 not available on AISI basis.

Imports: based on Canadian Customs Definitions

Tariff Item 380(c), Plates, hot or cold rolled, dished or curved, n.o.p.
(s.c. 5123) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom......	33	—	—	—	—	—	8	171
U.S.A..................	346	1,062	1,338	2,367	2,311	2,327	1,889	3,078
Others.................	—	—	—	—	—	—	—	—
Total..............	379	1,062	1,338	2,367	2,311	2,327	1,897	3,249

NOTE: Duty free entries under MFN tariff: 1948—3 tons; 1953—22 tons; 1954—nil; 1955—10 tons.

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	Imports	
1937..........................	—	
1948..........................	1,258	Production included in Summary No. II
1950..........................	1,373	
1951..........................	3,427	
1952..........................	2,269	
1953..........................	1,294	
1954..........................	1,102	
1955..........................	1,429	

Imports: based on Canadian Customs Definitions

Tariff Item 380(d), Plates, hot or cold rolled, with chequer, diamond, or other raised pattern on contact surface.

(s.c. 5125) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	777	—	920	1,248	637	250	444	220
U.S.A.	420	5,921	3,647	4,774	7,661	8,336	8,593	11,172
Others	557	—	—	—	17	—	—	—
Total	1,754	5,921	4,567	6,022	8,315	8,586	9,037	11,392

NOTE: Duty free entries under MFN tariff: 1951—8 tons; 1952—16 tons; 1953—8 tons; 1954—nil; 1955—nil.

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	Imports	
1937	—	
1948	7,451	
1950	5,407	Production included in Summary No. II
1951	6,533	
1952	8,835	
1953	9,578	
1954	10,088	
1955	12,339	

Imports: based on Canadian Customs Definitions

Tariff Item 386(a), Plates for use in boilers, pulp mill digesters, etc.

(s.c. 5124) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	1,413	290	2,241	1,767	574	255	18	—
U.S.A.	3,530	7,100	4,732	4,247	4,792	5,481	4,641	6,448
Total	4,943	7,390	6,973	6,014	5,366	5,736	4,659	6,448

NOTE: Duty free imports under the MFN tariff: 1953—125 tons; 1954—267 tons; 1955—88 tons.

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	Imports	
1937	—	
1948	6,960	
1950	6,350	Production included in Summary No. II
1951	6,827	
1952	5,017	
1953	4,125	
1954	3,531	
1955	4,995	

Summary No. II*—Plates—Hot or Cold Rolled (AISI)

(tons of 2000 lbs.)

	1. Imports	2. Production	Total of 1+2	Imports as Percentage of Total
1937	—	95,602	—	—
1948	67,682	228,978	296,660	22.79
1950	106,813	150,857	257,670	41.44
1951	212,966	184,707	397,673	53.55
1952	250,707	234,115	484,822	51.71
1953	155,333	221,818	377,151	41.19
1954	104,815	201,939	306,754	34.16
1955	134,087	253,640	387,727	34·58

* Includes imports and production for tariff items 380(a), 380(b), 380(c), 380(d) and 386(a)

Exports of Plates, Sheets and Strips of Iron and Steel

(tons of 2000 lbs.)

To:	1937	1948	1950	1952	1954
Hong Kong	—	56	1,836	2,536	4,827
Brazil	—	892	1,106	4,655	1,598
Italy	—	699	2,582	4,760	2,555
U.S.A.	9	2,989	14,240	12,814	13,411
Others	149	9,534	9,402	8,321	5,848
Total	158	14,170	29,166	33,086	28,239

Imports: based on Canadian Customs Definitions

Tariff Item 385, Sheets, plates, strip, hot rolled, not less than 5 cents per pound, n.o.p.
(s.c. 5132) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	25	661	1,682	28,955	49,928	30,261	5,857	6,715
U.S.A.	147	30,580	36,290	113,815	92,562	75,665	41,006	86,132
Belgium	—	1,169	2,139	23,743	11,651	906	84	1,419
Others	46	2	504	34,359	13,470	1,211	108	2,831
Total	218	32,412	40,615	200,872	167,611	108,043	47,055	97,097

NOTE: Duty free entries under the MFN tariff: 1948—3,884 tons; 1950—4,037 tons; 1951—1,718 tons; 1952—12,528 tons; 1953—5,288 tons; 1954—1,775 tons; 1955—4,050 tons.

Imports and Production: based on AISI Definitions

Included in Summary No. III

Imports: based on Canadian Customs Definitions

Tariff Item 385a, Sheets, plates, strip, of rust, acid or heat resisting steels, hot or cold rolled.
(s.c. 5133) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	254	103	808	826	976	1,644	1,880	1,473
U.S.A.	316	4,360	6,984	7,995	6,374	7,760	7,504	10,565
Belgium	—	—	10	589	—	—	23	—
Others	—	—	131	274	19	74	93	232
Total	570	4,463	7,933	9,684	7,369	9,478	9,500	12,270

NOTE: Duty free entries under MFN tariff: 1948—25 tons; 1950—113 tons; 1951—71 tons; 1952—187 tons; 1953—54 tons; 1954—20 tons; 1955—42 tons.

Imports and Production: based on AISI Definitions

Included in Summary No. III

Imports: based on Canadian Customs Definitions

Tariff Item 381(a), Sheets, hot or cold rolled, .08 inch or less in thickness, n.o.p.
(s.c. 5127) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom......	14,215	712	6,353	4,904	3,571	23,885	2,399	6,802
U.S.A................	40,487	43,754	52,145	73,784	56,138	49,036	33,406	58,689
Others................	2	66	769	2,394	25	38	1	777
Total.................	54,704	44,532	59,267	81,082	59,734	72,959	35,806	66,268

NOTE: Duty free entries: 1948—7,442 tons; 1950—2,595 tons; 1951—6,601 tons; 1952—4,444 tons; 1953—3,312 tons; 1954—3,171 tons; 1955—2,749 tons.

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	Imports*		
	Hot Rolled—thinner than .049 inch	Cold Rolled—thinner than .049 inch	
1948...............	9,296	33,751	
1950...............	5,871	31,837	
1951...............	14,182	47,305	Production included in Summary No. III
1952...............	3,800	30,922	
1953...............	1,766	41,436	
1954...............	108	13,386	
1955...............	94	21,888	

* Because the dividing point for AISI statistical purposes is .049 inch, whereas the dividing point for tariff purposes is .08 inch, some imports under item 381(a) are included in the AISI figures shown under item 381(b).

Imports: based on Canadian Customs Definitions

Tariff Item 381(b), Sheets, hot or cold rolled, more than .08 inch in thickness, n.o.p.
(s.c. 5126) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom......	763	17	1,492	573	33	36	51	42
U.S.A................	22,985	21,026	27,662	23,419	34,607	24,692	26,164	21,024
Others................	1,402	—	6,717	2,088	43	—	110	85
Total.................	25,150	21,043	35,871	26,080	34,683	24,728	26,325	21,151

NOTE: Duty free entries: 1948—1,935 tons; 1950—876 tons; 1951—991 tons; 1952—1,167 tons; 1954—654 tons; 1955—279 tons.

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	Imports*			
	Hot Rolled–0.049 inch or thicker	Cold Rolled–0.049 inch or thicker	Sheets for Motor Vehicles†	Sheets, hot rolled for pipe and tube†
1948..................	40,483	11,087	—	359
1950..................	74,447	13,205	—	589
1951..................	124,625	26,742	—	1,516
1952..................	91,822	24,990	2,072	567
1953..................	67,430	18,007	15,083	—
1954..................	45,701	9,183	18,570	—
1955..................	49,053	11,762	—	—

Production included in Summary No. III

* See footnote under item 381(a).
† Data regarding thicknesses are not available. It is therefore possible that some of these imports should be shown under item 381(a).

Imports: based on Canadian Customs Definitions

Tariff Item 382(a), Hoop, band or strip, hot rolled, 0·08 inch or thinner, n.o.p.
(s.c. 5112) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	447	—	1,274	149	—	38	288	28
U.S.A.	4,759	2,110	431	619	481	115	245	458
Belgium and Luxembourg	274	—	118	719	—	—	115	51
Others	64	—	95	—	—	—	—	—
Total	5,544	2,110	1,918	1,487	481	153	648	537

Note: Duty free entries: 1948—360 tons; 1950—66 tons; 1951—34 tons; 1952—18 tons.

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	Imports*	
	Thinner than 0·049 inch	
1948	1,604	
1950	1,698	
1951	2,562	Production included in Summary No. III
1952	1,296	
1953	435	
1954	449	
1955	196	

* See footnote under item 381(a).

Imports: based on Canadian Customs Definitions

Tariff Item 382(b), Hoop, band or strip, hot rolled, more than ·08 inch in thickness, n.o.p.
(s.c. 5113) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	5,089	4,440	1,416	1,259	2,585	894	611	651
United Kingdom	198	—	1,082	253	—	139	83	23
Beglium and Luxembourg	147	—	750	867	296	1,030	752	652
Others	—	—	7	100	—	67	190	610
Total	5,434	4,440	3,255	2,479	2,881	2,130	1,636	1,936

Note: Duty free entries: 1948—1,017 tons; 1950—125 tons; 1951—242 tons; 1952—422 tons; 1953—72 tons; 1954—4 tons.

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	Imports*		
	Strip, hot rolled, for pipe and tubes†	0·049 inch or thicker	
1948	524	16,007	
1950	309	16,107	
1951	2,441	18,438	Production included in Summary No. III
1952	2,363	27,261	
1953	2,683	17,244	
1954	—	5,344	
1955	—	6,683	

* See footnote under item 381(a)
† Data regarding thicknesses are not available; it is therefore possible that some of these imports should be shown under item 382(a).

Imports: based on Canadian Customs Definitions

Tariff Item 382(c), Hoop, band or strip, cold rolled or cold drawn, 0·08 inch or less in thickness, n.o.p.
(s.c. 5114) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	296	88	1,172	1,020	348	886	240	119
U.S.A.	3,287	9,540	6,801	8,538	7,118	7,110	611	4,681
Germany	86	3	—	137	13	1	—	—
Belgium and Luxembourg	71	—	—	—	—	15	750	10
Others	103	190	219	250	272	325	32	393
Total	3,843	9,821	8,192	9,945	7,751	8,337	1,633	5,203

NOTE: Duty free entries: 1948—685 tons; 1950—334 tons; 1951—634 tons; 1952—729 tons; 1953—467 tons; 1954—88 tons; 1955—151 tons.

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	Imports: Thinner than 0·049 inch	
1948	7,054	
1950	7,158	
1951	9,294	Production included in Summary No. III
1952	8,023	
1953	7,684	
1954	4,173	
1955	5,810	

Imports: based on Canadian Customs Definitions

Tariff Item 382(d), Hoop, band or strip, cold rolled or cold drawn, more than 0·08 inch in thickness, n.o.p.
(s.c. 5115) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	262	1,391	1,035	1,141	1,115	1,193	826	1,170
United Kingdom	29	—	34	171	19	22	34	3
Others	8	—	—	12	—	—	1	—
Total	299	1,391	1,069	1,324	1,134	1,215	861	1,173

NOTE: Duty free entries: 1948—195 tons; 1950—33 tons; 1951—60 tons; 1952—102 tons; 1953—14 tons; 1954—37 tons; 1955—111 tons.

Imports and Production: based on AISI Definitions

	Imports: 0·049 inch or thicker	
1948	3,627	
1950	3,868	Production included in Summary No. III
1951	6,321	
1952	5,778	
1953	5,203	
1954	1,945	
1955	2,756	

Imports: based on Canadian Customs Definitions

Tariff Item 383(a) and (b), Tinplate.
(s.c. 5137) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom......	82,102	686	445	849	437	1,160	6,956	330
U.S.A..................	19,951	47,999	1,167	856	1,004	6,055	3,254	10,775
Others.................	52	—	—	—	—	—	—	—
Total..............	102,105	48,685	1,612	1,705	1,441	7,215	10,210	11,105

NOTE: Duty free entries: 1948—803 tons; 1950—54 tons; 1951—10 tons.

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	Imports
1937..........................	—
1948..........................	47,756
1950..........................	1,243
1951..........................	1,577
1952..........................	1,122
1953..........................	5,325
1954..........................	6,631
1955..........................	10,271

Imports: based on Canadian Customs Definitions

Tariff Item 383(c), Sheets, plates, hoop, band or strip, coated with zinc, n.o.p.
(s.c. 5140) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom..............	8,767	444	9,018	4,389	4,296	5,054	1,827	836
U.S.A........................	3,736	12,640	13,958	16,580	13,722	18,486	18,610	21,658
Belgium and Luxembourg......	1,426	—	1	314	24	12	22	18
Others........................	20	—	18	138	4	—	1	194
Total......................	13,949	13,084	22,995	21,421	18,046	23,552	20,460	22,706

NOTE: Duty free entries: 1948—1,663 tons; 1950—2,823 tons; 1951—1,479 tons; 1952—1,285 tons; 1953—1,136 tons; 1954—950 tons; 1955—1,445 tons.

Imports and Production: based on AISI Definitions

Sheet and strip, galvanized
(tons of 2000 lbs.)

	1. Imports	2. Production	Total of 1+2	Imports as Percentage of Total
1937..........................	—	62,878	—	—
1948..........................	15,813	99,055	114,868	13·76
1950..........................	26,587	99,130	125,717	21.14
1951..........................	25,960	112,587	138,547	18.73
1952..........................	21,142	111,566	132,708	15.93
1953..........................	25,265	108,945	134,210	18.82
1954..........................	23,066	103,642	126,708	18.20
1955..........................	27,924	160,559	188,483	14·81

Imports: based on Canadian Customs Definitions

Tariff Item 383(d), Sheets, plates, hoop, band or strip, coated with metal or metals, n.o.p.
(s.c. 5139) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	3,279	1,664	—	—	—	3	925	1,062
United Kingdom	561	—	592	740	470	793	15	43
Germany	59	—	32	101	65	78	57	90
Total	3,899	1,664	624	841	535	874	997	1,195

NOTE: Duty free entries: 1948—108 tons; 1950—56 tons; 1951—81 tons; 1952—15 tons; 1953—53 tons; 1954—nil; 1955—83 tons.

Imports and Production: based on AISI Definitions

Imports included under item 383(e)
Production included in Summary No. III

Imports: based on Canadian Customs Definitions

Tariff Item 383(e), Sheets, plates, band or strip, coated with paint, tar, asphaltum or otherwise coated, n.o.p.
(s.c. 5135) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	33	—	16	5	20	—	20	50
U.S.A.	846	7,362	8,802	9,918	9,613	8,765	7,694	12,112
Others	26	—	—	—	—	1	2	12
Total	905	7,362	8,818	9,923	9,633	8,766	7,716	12,174

NOTE: Duty free entries: 1948—184 tons; 1950—38 tons; 1951—67 tons; 1952—105 tons; 1953—21 tons; 1954—21 tons; 1955—1 ton.

Imports and Production: based on AISI Definitions

Sheets and strip, hot or cold rolled, coated with paint, tar, asphaltum, vitreous enamel, etc.

	Imports*	
1937	—	
1948	8,602†	
1950	9,775†	Production included in Summary No. III
1951	10,803†	
1952	7,918	
1953	8,305	
1954	7,255	
1955	9,743	

* Includes sheets, etc. coated with paint, vitreous enamel and sheets, etc. coated with metal or metals other than tin, zinc or terneplate
† Includes 2 tons of painted plate in 1951, 36 tons in 1950 and 92 tons in 1948

Imports: based on Canadian Customs Definitions

Tariff Item 383(f), Sheets, plates, hoop, band or strip, coated with vitreous enamel, n.o.p.
(s.c. 5136) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	4	5	—	—	18	85	154	180
United Kingdom	9	—	—	—	—	—	—	190
Total	13	5	—	—	18	85	154	370

Imports and Production: based on AISI Definitions

Imports included under item 383(e)
Production included in Summary No. III

Imports: based on Canadian Customs Definitions

Tariff Item 383(g), Sheets, plates, hoop, band or strip, corrugated or pebbled, coated or not.
(s.c. 5134) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	164	2	400	364	143	35	29	125
U.S.A.	91	3,908	4,071	4,771	5,916	8,307	6,128	8,250
Germany	—	—	—	134	13	2	—	—
Others	36	—	—	—	—	—	—	—
Total	291	3,910	4,471	5,269	6,072	8,344	6,157	8,375

Imports and Production: based on AISI Definitions

Sheets, corrugated, coated or not
(tons of 2000 lbs.)

	Imports
1937	—
1948	3,511
1950	4,000
1951	4,674
1952	6,090
1953	7,772
1954	5,439
1955	7,286

Imports: based on Canadian Customs Definitions

Tariff Item 386(b), Sheets, plates, etc., for butts, hinges, typewriters, or sewing machines.
(s.c. 5144) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	690	1,217	1,079	2,830	3,179	1,111	340	412
Others	40	—	—	—	13	1	—	—
Total	730	1,217	1,079	2,830	3,192	1,112	340	412

Imports and Production: based on AISI Definitions

Strip for butt hinges
(tons of 2000 lbs.)

	Imports*	
1937	—	
1948	1,152	
1950	954	Production included in Summary No. III
1951	1,780	
1952	2,730	
1953	1,655	
1954	1,042	
1955	885	

* Includes imports entered under tariff item 386(u), as well as under 386(b)

Imports: based on Canadian Customs Definitions

Tariff Item 386(u), Hoop, band or strip, of steel of Bessemer quality, for hinges.
(s.c. 5153) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	—	497	1,155	1,731	535	687	177	515
Belgium	—	—	—	—	—	—	107	50
Total	—	497	1,155	1,731	535	687	284	565

Imports and Production: based on AISI Definitions

Imports included under item 386(b)
Production included in Summary No. III

Imports: based on Canadian Customs Definitions

Tariff Item 386(c), Sheets, etc., hot rolled, for agricultural implements.
(s.c. 5142) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	1,423	2,383	2,794	2,790	2,245	619	287	1,563
United Kingdom	—	—	344	169	25	—	—	—
Total	1,423	2,383	3,138	2,959	2,270	619	287	1,563

Imports and Production: based on AISI Definitions

Imports and Production included in Summary No. III

Imports: based on Canadian Customs Definitions

Tariff Item 386(d), 395, Sheets and strips for saddlery and hames.
(s.c. 5145) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	75	1	2	—	16	25	12	9
Total	75	1	2	—	16	25	12	9

Imports and Production: based on AISI Definitions

Imports and Production included in Summary No. III

Imports: based on Canadian Customs Definitions

Tariff Item 386e, Terneplate.
(s.c. 5157) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	—	3	25	85	40	52	—	—
U.S.A.	—	6,735	6,876	7,298	6,356	8,927	5,711	8,534
Total	—	6,738	6,901	7,383	6,396	8,979	5,711	8,534

Note: Duty free entries: 1948—309 tons; 1950—209 tons; 1951—390 tons; 1952—214 tons; 1953—271 tons; 1954—183 tons; 1955—183 tons.

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	Imports
1937	—
1948	7,025
1950	7,241
1951	8,356
1952	7,337
1953	9,238
1954	5,489
1955	8,842

Imports: based on Canadian Customs Definitions

Tariff Item 386(f), Hoop, band or strip, for mats.
(s.c. 5117) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom......	—	—	24	—	—	—	—	—
U.S.A................	4	—	—	—	—	23	33	17
Total.............	4	—	24	—	—	23	33	17

Imports and Production: based on AISI Definitions

Included in Summary No. III

Imports: based on Canadian Customs Definitions

Tariff Item 386(g), Steel for saws or straw cutters, not tempered
(s.c. 5147) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom......	3	11	23	50	31	60	25	46
U.S.A................	990	1,481	1,488	2,487	937	1,220	891	1,530
Sweden...............	—	—	—	—	—	8	35	61
Total.............	993	1,492	1,511	2,537	968	1,288	951	1,637

Imports and Production: based on AISI Definitions

Sheet and strip for saws and straw cutters
(tons of 2000 lbs.)

	Imports	
1937....................................	—	
1948....................................	1,733	
1950....................................	1,777	Production included in Summary No. III
1951....................................	2,974	
1952....................................	1,595	
1953....................................	1,321	
1954....................................	1,048	
1955....................................	1,874	

Imports: based on Canadian Customs Definitions

Tariff Item 386(h), Steel, tempered, for saws.
(s.c. 5146) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom......	55	—	4	19	—	1	5	8
U.S.A................	78	141	144	280	280	154	100	141
Sweden...............	31	—	45	106	110	81	56	65
Others...............	—	73	—	—	—	—	—	—
Total...........	164	214	193	405	390	236	161	214

Note: Duty free entries under MFN tariff: 1948—2 tons; 1951—5 tons; 1952—11 tons; 1953—1 ton: 1954—5 tons; 1955—10 tons.

Imports and Production: based on AISI Definitions

Imports included under item 386(g)
Production included in Summary No. III

Imports: based on Canadian Customs Definitions

Tariff Item 386(i), Steel for buckle clasps, bedfasts, etc.
(s.c. 5143) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	8	—	117	192	179	143	70	123
U.S.A.	443	808	716	1,317	663	1,134	541	694
Belgium and Luxembourg	175	—	—	51	—	—	—	—
Others	—	—	—	—	11	1	—	—
Total	626	808	833	1,560	853	1,278	611	817

Imports and Production: based on AISI Definitions

Strip for shoe and corset laces, buckles, ball bearings, etc.
(tons of 2000 lbs.)

	Imports*	
1937	—	
1948	1,252	
1950	1,683	Production included in Summary No. III
1951	1,819	
1952	399	
1953	223	
1954	7	
1955	35	

* Includes entries under tariff item 386(j).

Imports: based on Canadian Customs Definitions

Tariff Item 386(j), Hoop, band or strip for shoe and corset laces.
(s.c. 5119) (Dollars)

Source	1937	1948	1950	1951	1952	1953	1954	1955
	$	$	$	$	$	$	$	$
U.S.A.	61	1,673	—	—	—	—	—	—
Germany	4,869	—	—	—	—	—	—	—
Total	4,930	1,673	—	—	—	—	—	—

Imports and Production: based on AISI Definitions

Imports included under item 386(i)
Production included in Summary No. III

Imports: based on Canadian Customs Definitions

Tariff Item 386(k), Sheets, hot or cold rolled, for vitreous enamelled hollow-ware or sheets.
(s.c. 5129) (tons of 2000 lbs)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	1,228	634	943	1,303	713	6,264	353	1,390
U.S.A.	5,598	6,028	6,739	11,127	4,951	6,668	5,259	7,902
Belgium and Luxembourg	—	—	—	837	—	73	—	—
Others	—	—	—	730	—	—	—	—
Total	6,826	6,662	7,682	13,997	5,664	13,005	5,612	9,292

Imports and Production: based on AISI Definitions

Sheets for hollow-ware (vitreous enamel)
(tons of 2000 lbs.)

	Imports	
1937	—	
1948	8,341	
1950	13,082	Production included in Summary No. III
1951	18,402	
1952	7,432	
1953	17,697	
1954	8,551	
1955	14,193	

Imports: based on Canadian Customs Definitions

Tariff Item 386(l), Sheets, cold rolled, blue polished, for cooking or heating apparatus.
(s.c. 5130) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	629	265	384	820	286	286	60	6
United Kingdom	13	—	32	—	—	207	—	—
Others	4	—	—	—	—	—	—	—
Total	646	265	416	820	286	493	60	6

Imports and Production: based on AISI Definitions

Sheets for cooking and heating apparatus
(tons of 2000 lbs.)

	Imports	
1937	—	
1948	218	
1950	170	Production included in Summary No. III
1951	938	
1952	248	
1953	250	
1954	160	
1955	—	

Imports: based on Canadian Customs Definitions

Tariff Item 386(m) (i), 386b, Sheets or strip, hot or cold rolled, for the manufacture of sheets or strip coated with tin or with non-metallic material.
(s.c. 5128) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	54	67,891	60	91	—	356	121	55
Belgium and Luxembourg	—	—	—	—	—	121	—	—
United Kingdom	10,953	—	—	—	—	—	—	—
Total	11,007	67,891	60	91	—	477	121	55

Imports and Production: based on AISI Definitions

Blackplate
(tons of 2000 lbs.)

	Imports	
1937	—	
1948	68,538	
1950	331	Production included in Summary No. III
1951	817	
1952	166	
1953	147	
1954	36	
1955	135	

Imports: based on Canadian Customs Definitions

Tariff Item 386(m) (ii), Sheets, hoop, band or strip, hot rolled, to be coated with zinc or other metal or metals, not including tin.
(s.c. 5141) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	12	2	19	—	255	—	—	—
United Kingdom	8,777	—	—	—	—	—	—	—
Total	8,789	2	19	—	255	—	—	—

Imports and Production: based on AISI Definitions

Included in Summary No. III

Imports: based on Canadian Customs Definitions

Tariff Item 386(n), Hoop, band or strip, hot rolled in coils, for cold rolling.
(s.c. 5116) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	289	—	154	12	20	—	—	—
U.S.A.	5,389	4,784	1,717	2,089	2,525	716	152	81
Others	29	—	—	—	—	—	—	—
Total	5,707	4,784	1,871	2,101	2,545	716	152	81

Imports and Production: based on AISI Definitions

Strip for cold rolling
(tons of 2000 lbs.)

	Imports	
1937	—	
1948	4,972	
1950	2,234	Production included in Summary No. III
1951	2,452	
1952	2,217	
1953	790	
1954	231	
1955	126	

Imports: based on Canadian Customs Definitions

Tariff Item 386(q), 880q, Hoop steel, hot or cold rolled, for barrel hoops.
(s.c. 5120) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	573	—	414	385	1	121	82	59
U.S.A.	1,370	1,365	549	1,311	565	420*	752*	935*
Others	180	—	—	—	—	—	—	—
Total	2,123	1,365	963	1,696	566	541*	834*	994*

* Duty free entries included in this item: 1953—67 tons; 1954—737 tons; 1955—930 tons.

Imports and Production: based on AISI Definitions

Strip for hoops
(tons of 2000 lbs.)

	Imports	
1937	—	
1948	2,073	
1950	1,669	Production included in Summary No. III
1951	4,794	
1952	1,432	
1953	1,056	
1954	871	
1955	875	

Imports: based on Canadian Customs Definitions

Tariff Item 386(o), Hoop, band or strip, cold rolled, electro-galvanized, for rolling doors of steel.
(s.c. 5118) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	—	—	—	58	110	18	140	130
U.S.A.	36	47	53	48	185	40	—	27
Total	36	47	53	106	295	58	140	157

Imports and Production: based on AISI Definitions

Included In Summary No. III

Imports: based on Canadian Customs Definitions

Tariff Item 386(p), Sheets or strip, hot or cold rolled, for electrical apparatus.
(s.c. 5131) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	41	—	2,016	1,267	1,187	305	286	116
U.S.A.	6,226	16,885	24,356	28,629	21,250	25,665	18,818	11,786
Total	6,267	16,885	26,372	29,896	22,437	25,970	19,104	11,902

NOTE: Duty free entries: 1955—10,818 tons.

Imports and Production: based on AISI Definitions

Sheet and strip containing .75 per cent or more of silicon
(tons of 2000 lbs.)

	Imports	
1937	—	
1948	21,061	
1950	28,890	Production included in Summary No. III
1951	29,974	
1952	22,152	
1953	27,320	
1954	18,555	
1955	22,949	

Imports: based on Canadian Customs Definitions

Tariff Item 386(r), Sheets or strip, cold rolled, for pipes and tubes.
(s.c. 5148) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A.	3,764	10,421	10,423	16,615	12,566	15,123	9,995	12,265
United Kingdom	5	—	—	—	—	676	—	66
Belgium and Luxembourg	—	—	110	—	—	274	—	—
Others	—	—	—	669	—	—	—	—
Total	3,769	10,421	10,533	17,284	12,566	16,073	9,995	12,331

Imports and Production: based on AISI Definitions

Sheet and strip, cold rolled, for pipes and tubes
(tons of 2000 lbs.)

	Imports	
1937	—	
1948	9,413	
1950	9,148	Production included in Summary No. III
1951	10,905	
1952	7,005	
1953	501	
1954	944	
1955	228	

Imports: based on Canadian Customs Definitions

Tariff Item 387a, Railway ties, fish-plates, splice bars, rail joints, tie-plates, of iron or steel.
(s.c. 5704) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	1	—	2,812	1,100	1,048	837	2,622	2,115
U.S.A.	1,851	2,015	2,244	2,544	4,240	8,126	2,100	2,574
Belgium and Luxembourg	31	—	40	61	38	31	23	29
Germany	—	—	—	24	1	4	8	2
Others	—	—	—	—	—	—	5	8
Total	1,883	2,015	5,096	3,729	5,327	8,998	4,758	4,728

Imports and Production: based on AISI Definitions

Track Material: angles, bars, tie-plates, rail joints
(tons of 2000 lbs.)

	1. Imports	2. Production	Total of 1+2	Imports as Percentage of Total
1937	—	—	—	—
1948	1,097	—	—	—
1950	3,696	—	—	—
1951	3,726	86,243	89,969	4.1
1952	4,028	90,863	94,891	4.2
1953	8,199	65,120	73,319	11.2
1954	3,810	52,561	56,371	6.8
1955	4,047	82,438	86,485	4·7

Imports: based on Canadian Customs Definitions

Tariff Item 387b, Railway intersection layouts, intersections, switches, crossings, frogs, guard rails, of iron or steel.

(s.c. 5705) (Dollars)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom......	2,352	1,384	378	546	7,260	1,526	—	840
U.S.A...............	15,640	43,389	83,368	76,059	174,421	151,010	103,677	109,266
Alaska..............	—	—	—	—	—	—	418	442
Total...............	17,992	44,773	83,746	76,605	181,681	152,536	104,095	110,548

Note: Duty free entries: 1948—$22; 1951—$1,092.

Imports and Production: based on AISI Definitions

Track material: intersections, switches, frogs

(tons of 2000 lbs.)

	Imports	Production*
		$
1937..........................	—	—
1948..........................	118	1,489,000
1950..........................	102	1,845,000
1951..........................	615	2,330,000
1952..........................	1,291	3,637,000
1953..........................	276	3,305,000
1954..........................	191	—
1955..........................	62	—

* No tonnage figures available

Imports: based on Canadian Customs Definitions

Tariff Item 388(d), 388(g), Rails (track) other than railway rails.

(s.c. 5163) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom......	—	—	—	—	—	—	115	146
U.S.A...............	—	—	—	—	—	—	1,561	2,109
Others..............	—	—	—	—	—	—	2,737	1,331
tal.................	—	—	—	—	—	—	4,413	3,586

Note: Duty free entries: 1954—6 tons; 1955—29 tons.

Imports and Production: based on AISI Definitions

Not available

Imports: based on Canadian Customs Definitions

Tariff Item 392a, Forgings, hollow, not less than 12 inches in internal diameter; and Forgings, 20 tons or over.

(s.c. 5051) (Dollars)

Source	1937	1948	1950	1951	1952	1953	1954	1955
	$	$	$	$	$	$	$	$
United Kingdom......	76,510	131,197	397,244	457,103	553,180	665,537	689,608	436,416
U.S.A................	1,884	123,509	100,211	139,332	163,030	232,563	246,737	289,675
Germany..............	2,718	—	—	—	—	—	10,600	23,000
Others................	126	—	—	—	—	—	—	—
Total.................	81,238	254,706	497,455	596,435	716,210	898,100	946,945	749,091

NOTE: Duty free entry: 1952—$2,988 under MFN tariff.

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	Imports
1937...........................	—
1948...........................	1,748
1950...........................	3,450
1951...........................	4,761
1952...........................	3,770
1953...........................	1,000
1954...........................	n.a.
1955...........................	n.a.

Imports: based on Canadian Customs Definitions

Tariff Item 394(a), Axles, axle bars, axle blanks, and parts, for railway vehicles.

(s.c. 5041) (Dollars)

Source	1937	1948	1950	1951	1952	1953	1954	1955
	$	$	$	$	$	$	$	
United Kingdom......	10,420	3,923	—	73,983	103,512	98	—	905
U.S.A................	8,090	104,652	85,874	74,307	70,621	184,172	29,809	43,056
Total.................	18,510	108,575	85,874	148,290	174,133	184,270	29,809	43,961

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	Imports
1937...........................	—
1948...........................	475
1950...........................	80
1951...........................	412
1952...........................	796
1953...........................	762
1954...........................	16
1955...........................	115

Imports: based on Canadian Customs Definitions

Tariff Item 394(b), Axles, axle bars, axle blanks, and parts, for other vehicles.
(s.c. 5042) (Dollars)

Source	1937	1948	1950	1951	1952	1953	1954	1955
	$	$	$	$	$	$	$	$
United Kingdom......	666	1,463	40	1,097	380	777	156	398
U.S.A................	288,313	206,014	99,946	32,810	55,138	88,089	46,039	422,661
Others................	132	—	—	—	—	—	—	—
Total................	289,111	207,477	99,986	33,907	55,518	88,866	46,195	423,059

NOTE: Duty free entries: 1948—$36,195; 1950—$9,800; 1951—$12,952; 1952—$15,379; 1953—$18,778; 1954—$4,245.

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	Imports
1937..........................	—
1948..........................	51
1950..........................	—
1951..........................	—
1952..........................	—
1953..........................	—
1954..........................	—
1955..........................	—

Imports: based on Canadian Customs Definitions

Tariff Item 394(c), Axles, axle bars, axle blanks, and parts, n.o.p.
(s.c. 5043) (Dollars)

Source	1937	1948	1950	1951	1952	1953	1954	1955
	$	$	$	$	$	$	$	$
United Kingdom......	—	—	257	215	733	246	772	315
U.S.A................	584	60,675	81,925	84,893	230,512	157,239	39,271	104,292
Others................	32	—	—	—	—	—	—	725
Total.............	616	60,675	82,182	85,108	231,245	157,485	40,043	105,332

NOTE: Duty free entries: 1950—$1,514; 1951—$3,202; 1952—$281; 1953—$1,013; 1954—$17,356; 1955—$61,965.

Imports and Production: based on AISI Definitions

Not available

Imports: based on Canadian Customs Definitions

Tariff Item 395a, Blanks for milling cutters.
(s.c. 5111) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
U.S.A................	2	—	7	5	6	3	7	2
Others................	3	—	—	—	—	—	—	—
Total.............	5	—	7	5	6	3	7	2

Imports and Production: based on AISI Definitions

Not available

Imports: based on Canadian Customs Definitions

Tariff Item 440f, Masts, parts, angles, beams, knees, plates and sheets; for ships.
(s.c. 5165) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	740	1,266	3,977	9,295	5,057	7,115	3,141	1,876
U.S.A.	1,279	10,502	8,068	21,133	21,664	17,786	13,540	8,924
Belgium and Luxembourg	—	—	80	552	790	88	36	108
Others	—	—	—	658	3,691	184	10	2,727
Total	2,019	11,768	12,125	31,638	31,202	25,173	16,727	13,635

Imports and Production: based on AISI Definitions

Not available

Imports: based on Canadian Customs Definitions

Tariff Item 441c, Steel imported for the manufacture of rifles for the Government of Canada.
(s.c. 5695) (Dollars)

Source	1937	1948	1950	1951	1952	1953	1954	1955
	$	$	$	$	$	$	$	$
United Kingdom	605	—	—	—	119	13,356	—	—
U.S.A.	—	—	—	—	—	—	101	—
Total	605	—	—	—	119	13,356	101	—

Imports and Production: based on AISI Definitions

Not available

Imports: based on Canadian Customs Definitions

Tariff Item 438f, Strip, hot rolled, with rolled or mill edge, for motor vehicles.
(s.c. 5151) (tons of 2000 lbs.)

Source	1937	1948	1950	1951	1952	1953	1954	1955
United Kingdom	—	—	40	15	—	61	—	—
U.S.A.	7,150	13,753	21,488	20,325	20,444	23,275	8,831	356
Total	7,150	13,753	21,528	20,340	20,444	23,336	8,831	356

Imports and Production: based on AISI Definitions

(tons of 2000 lbs.)

	Imports	
1937	—	
1948	12,442	
1950	18,036	Production included in Summary No. III
1951	18,607	
1952	15,649	
1953	19,938	
1954	11,330	
1955	8,595	

Summary No. III—Sheets and Strip—Hot or Cold Rolled (AISI)

(tons of 2000 lbs.)

	Imports—Sheet or Strip Hot or Cold Rolled	Production Hot Rolled	Sheet or Strip Cold Rolled
1937	—	98,881	6,174
1948	263,497	508,450	176,431
1950	242,795	755,258	437,931
1951	357,689	870,041	524,656
1952	267,837	841,148	510,166
1953	256,174	1,036,619	566,269
1954	148,889	826,648	516,390
1955	157,880	1,198,428	535,365

NOTE: Includes imports and production for tariff items 385, 385a, 381(a), 381(b), 382(b), 382(a), 382(c), 382(d), 383(d), 383(e), 383(f), 386(b), 386(u), 386(c), 386(d), 395, 386(f), 386(g), 386(h), 386(i), 386(j), 386(k), 386(l), 386(m) (i), 386b, 386(m) (ii), 386(n), 386(q), 880q, 386(p), 386(r), 438f.

Imports of plate under the above items have been excluded from this Summary.

SUPPLY OF BASIC STEEL PRODUCTS

1. The figures in the following tables showing shipments by Canadian mills were supplied by the five basic steel producers plus Canadian Furnace Co. Limited (which produces pig iron only). The import statistics were obtained from the Dominion Bureau of Statistics.

2. Some firms reported sales, rather than shipments. In the circumstances, such figures have been shown as shipments on the assumption that sales and shipments correspond fairly closely.

3. There are distortions in the breakdown of distribution by provinces; many of these, while of relatively small importance, should be read in the light of the following notes:

   (a) Rails and track material are shipped to stockpiling points across Canada, some of which serve as distribution centres for more than one province. It has been possible to show shipments only to the initial railway stockpiling points.

   (b) Mills' shipments to jobbers and warehouses are included in the provincial totals. Portions of such shipments would be reshipped across provincial boundaries, and it is not possible to trace such inter-provincial movements.

   (c) Imports are shown under the province of initial entry. It has not been possible to determine the quantities of imported steel which remained in the province of initial entry, as distinct from those which were in transit to other provinces.

   (d) The Ontario and Quebec sales-territories of certain steel producers do not coincide exactly with the provincial boundary.

4. While most figures for track materials are available in tonnages, small quantities of imports are available on the basis of value only. In such cases, the tonnage of imports has been estimated.

5. Shipments of bars by mills include hot-rolled bars only.

6. Pipe materials are composed largely of hot-rolled flat steel forms; no rounds or billets are included. No figures are shown for 1951 and 1952 because of obvious inconsistencies in reporting.

7. Since there are only two Canadian producers of tinplate, provincial distribution, as determined by the shipments of each producer, is not shown.

CANADA: SUPPLY OF BASIC STEEL PRODUCTS

(tons of 2000 lbs.)

	Shipments by Canadian Mills	Imports	Supply Available	Imports as p.c. of Supply
	Calendar Year 1951			
Pig iron	474,671	22,170	496,841	4·5
Ingots, blooms, billets	201,303	118,979	320,282	37·1
Rails	252,559	13,619	266,178	5·1
Track material	99,407	4,511	103,918	4·3
Bars and rods	659,570	179,143	838,713	21·3
Structurals	212,260	381,832	594,092	64·3
Total, sheet, plate, strip	492,024	567,702	1,059,726	53·6
Galvanized	89,710	23,005	112,715	20·4
Tinplate	258,192	1,715	259,907	·6
	Calendar Year 1952			
Pig iron	350,305	1,671	351,976	·5
Ingots, blooms, billets	234,011	145,366	379,377	38·3
Rails	254,027	10,810	264,837	4·1
Track material	107,008	6,993	114,001	6·1
Bars and rods	647,365	160,406	807,771	19·8
Structurals	193,692	339,437	533,129	63·7
Total, sheet, plate, strip	516,439	502,082	1,018,521	49·3
Galvanized	83,978	19,625	103,603	18·9
Tinplate	245,385	1,441	246,826	0·6
	Calendar Year 1953			
Pig iron	316,118	25,493	341,611	7·5
Ingots, blooms, billets	65,498	28,489	93,987	30·3
Rails	300,592	9,944	310,536	3·2
Track material	78,068	10,346	88,414	11·7
Bars and rods	657,322	102,359	759,681	13·5
Pipe material	116,181	129,827	246,008	52·8
Structurals	255,196	309,773	564,969	54·8
Total sheet, plate, strip	715,234	423,260	1,138,494	37·2
Galvanized	82,361	24,746	107,107	23·1
Tinplate	215,653	7,216	222,869	3·2
	Calendar Year 1954			
Pig iron	242,059	20,127	262,186	7·7
Ingots, blooms, billets	42,220	5,532	47,752	11·6
Rails	226,051	14,963	241,014	6·2
Track material	59,198	5,687	64,885	8·8
Bars and rods	513,877	60,541	574,418	10·5
Pipe material	136,369	69,790	206,159	33·8
Structurals	162,065	344,844	506,909	68·0
Total sheet, plate, strip	580,203	267,253	847,456	31·5
Galvanized	96,948	21,549	118,497	18·2
Tinplate	234,904	10,209	245,113	4·2
	Calendar Year 1955			
Pig iron	344,223	14,943	359,166	4·2
Ingots, blooms, billets	49,254	3,764	53,018	7·1
Rails	162,458	22,294	184,752	12·1
Track material	72,768	5,713	78,481	7·3
Bars and rods	552,860	80,756	633,616	12·7
Pipe material	246,685	97,354	344,039	28·3
Structurals	181,802	360,126	541,928	66·4
Total sheet, plate, strip	810,794	367,357	1,178,151	31·2
Galvanized	149,258	24,303	173,561	14·0
Tinplate	286,249	11,105	297,354	3·7

Newfoundland: Supply of Steel Products
(tons of 2000 lbs.)

	Shipments by Canadian Mills	Imports	Supply Available	Imports as p.c. of Supply	Supply as p.c. of Canadian Total
	Calendar Year 1951				
Pig iron	197	—	197	—	—
Rails	—	4,586	4,586	100·0	1·7
Track material	11	964	975	98·9	·9
Bars and rods	2,262	355	2,617	13·6	·3
Structurals	293	1,758	2,051	85·7	·3
Sheet, plate and strip	584	356	940	37·9	·1
Galvanized	235	44	279	15·8	·2
	Calendar Year 1952				
Pig iron	174	—	174	—	—
Rails	314	238	552	43·1	·2
Track material	32	993	1,025	96·9	·9
Bars and rods	3,727	621	4,348	14·3	·5
Structurals	106	958	1,064	90·0	·2
Sheet, plate and strip	432	244	676	36·1	·1
Galvanized	216	11	227	4·8	·2
	Calendar Year 1953				
Pig iron	—	—	—	—	—
Rails	2,917	54	2,971	1·8	·9
Track material	199	739	938	78·8	1·1
Bars and rods	3,121	212	3,333	6·4	·4
Structurals	173	87	260	33·5	—
Sheet, plate and strip	602	127	729	17·4	·1
Galvanized	275	43	318	13·5	·3
	Calendar Year 1954				
Pig iron	—	56	56	—	—
Rails	2,500	186	2,686	6·9	1·1
Track material	226	783	1,009	77·6	1·5
Bars and rods	2,904	632	3,536	17·9	·6
Structurals	226	178	404	44·1	·1
Sheet, plate and strip	669	183	852	21·5	·1
Galvanized	398	59	457	12·9	·4
	Calendar Year 1955				
Pig iron	64	55	119	46·2	—
Rails	26	—	26	—	—
Track material	159	513	672	76·3	·8
Bars and rods	3,427	331	3,758	8·8	·6
Structurals	329	43	372	11·5	·1
Sheet, plate and strip	565	689	1,254	54·9	·1
Galvanized	404	12	416	2·9	·2

Prince Edward Island: Supply of Steel Products

(tons of 2000 lbs.)

	Shipments by Canadian Mills	Imports	Supply Available	Imports as p.c. of Supply	Supply as p.c. of Canadian Total
	Calendar Year 1951				
Pig iron	—	—	—	—	—
Track material	—	1	1	—	—
Bars and rods	181	—	181	—	—
Structurals	1,747	—	1,747	—	·3
Sheet, plate and strip	41	1	42	2·4	—
Galvanized	71	—	71	—	·1
	Calendar Year 1952				
Pig iron	38	—	38	—	—
Track material	—	—	—	—	—
Bars and rods	162	—	162	—	—
Structurals	2,310	—	2,310	—	·4
Sheet, plate and strip	36	—	36	—	—
Galvanized	58	—	58	—	·1
	Calendar Year 1953				
Pig iron	54	—	54	—	—
Bars and rods	223	—	223	—	—
Structurals	27	—	27	—	—
Sheet, plate and strip	40	—	40	—	—
Galvanized	65	—	65	—	·1
	Calendar Year 1954				
Pig iron	—	—	—	—	—
Bars and rods	79	—	79	—	—
Structurals	11	142	153	92·8	—
Sheet, plate and strip	22	—	22	—	—
Galvanized	30	—	30	—	—
	Calendar Year 1955				
Pig iron	—	—	—	—	—
Bars and rods	109	—	109	—	—
Structurals	35	—	35	—	—
Sheet, plate and strip	43	—	43	—	—
Galvanized	55	—	55	—	—

Nova Scotia: Supply of Steel Products
(tons of 2000 lbs.)

	Shipments by Canadian Mills	Imports	Supply Available	Imports as p.c. of Supply	Supply as p.c. of Canadian Total
	Calendar Year 1951				
Pig iron	4,912	—	4,912	—	1·0
Ingots, blooms, billets	329	21	350	6·0	·1
Rails	9,609	9	9,618	·1	3·6
Track material	951	65	1,016	6·4	1·0
Bars and rods	11,953	147	12,100	1·2	1·4
Structurals	19,177	9,968	29,145	34·2	4·9
Sheet, plate and strip	14,464	8,673	23,137	37·5	2·2
Galvanized	877	105	982	10·7	·9
	Calendar Year 1952				
Pig iron	3,184	—	3,184	—	·9
Ingots, blooms, billets	291	1	292	·3	·1
Rails	7,745	49	7,794	·6	2·9
Track material	565	49	614	8·0	·5
Bars and rods	8,856	1,387	10,243	13·5	1·3
Structurals	19,859	6,590	26,449	24·9	5·0
Sheet, plate and strip	19,314	7,810	27,124	28·8	2·7
Galvanized	1,132	104	1,236	8·4	1·2
	Calendar Year 1953				
Pig iron	774	3,360	4,134	81·3	1·2
Ingots, blooms, billets	171	1	172	·6	·2
Rails	13,190	61	13,251	·5	4·3
Track material	527	19	546	3·5	·6
Bars and rods	9,728	281	10,009	2·8	1·3
Structurals	23,628	8,112	31,740	25·6	5·6
Sheet, plate and strip	23,688	3,646	27,334	13·3	2·4
Galvanized	989	33	1,022	3·2	1·0
	Calendar Year 1954				
Pig iron	174	4,490	4,664	96·3	1·8
Ingots, blooms, billets	108	—	108	—	·2
Rails	14,811	1	14,812	—	6·1
Track material	434	16	450	3·5	·7
Bars and rods	9,244	138	9,382	1·5	1·6
Structurals	11,629	12,858	24,487	52·5	4·8
Sheet, plate and strip	12,408	2,832	15,240	18·6	1·8
Galvanized	980	127	1,107	11·5	·9
	Calendar Year 1955				
Pig iron	193	2,439	2,632	92·7	·7
Ingots, blooms, billets	26	—	26	—	—
Rails	440	8	448	1·8	·2
Track material	357	18	375	4·8	·5
Bars and rods	11,188	153	11,341	1·3	1·8
Structurals	9,058	8,328	17,386	47·9	3·2
Sheet, plate and strip	9,931	1,535	11,466	13·4	1·0
Galvanized	1,563	176	1,739	10·1	1·0

New Brunswick: Supply of Steel Products

(tons of 2000 lbs.)

	Shipments by Canadian Mills	Imports	Supply Available	Imports as p.c. of Supply	Supply as p.c. of Canadian Total
	Calendar Year 1951				
Pig iron	3,097	—	3,097	—	·6
Ingots, blooms, billets	1	—	1	—	—
Rails	13,459	1,771	15,230	11·6	5·7
Track material	5,649	72	5,721	1·2	5·5
Bars and rods	4,945	1,957	6,902	28·4	·8
Structurals	1,473	5,225	6,698	78·0	1·1
Sheet, plate and strip	4,308	5,115	9,423	54·3	·9
Galvanized	555	64	619	10·3	·5
	Calendar Year 1952				
Pig iron	2,468	—	2,468	—	·7
Ingots, blooms, billets	424	—	424	—	·1
Rails	8,935	20	8,955	·2	3·4
Track material	6,364	131	6,495	2·0	5·7
Bars and rods	6,563	1,248	7,811	16·0	1·0
Structurals	1,567	3,690	5,257	70·2	1·0
Sheet, plate and strip	3,770	2,075	5,845	35·5	·6
Galvanized	476	180	656	27·4	·6
	Calendar Year 1953				
Pig iron	2,533	—	2,533	—	·7
Ingots, blooms, billets	222	—	222	—	·2
Rails	17,239	1	17,240	—	5·5
Track material	6,875	129	7,004	1·8	7·9
Bars and rods	3,211	50	3,261	1·5	·4
Structurals	1,099	2,141	3,240	66·1	·6
Sheet, plate and strip	3,815	2,244	6,059	37·0	·5
Galvanized	551	148	699	21·2	·6
	Calendar Year 1954				
Pig iron	1,918	—	1,918	—	·7
Ingots, blooms, billets	114	—	114	—	·2
Rails	8,878	—	8,878	—	3·7
Track material	8,034	121	8,155	1·5	12·6
Bars and rods	1,555	638	2,193	29·1	·4
Structurals	904	1,804	2,708	66·6	·5
Sheet, plate and strip	3,013	1,235	4,248	29·1	·5
Galvanized	673	126	799	15·8	·7
	Calendar Year 1955				
Pig iron	2,573	—	2,573	—	·7
Ingots, blooms, billets	86	—	86	—	·2
Rails	10,686	—	10,686	—	5·8
Track material	4,117	9	4,126	·2	5·2
Bars and rods	3,921	241	4,162	5·8	·6
Structurals	2,223	5,040	7,263	69·4	1·3
Sheet, plate and strip	4,385	2,916	7,301	39·9	·6
Galvanized	804	2	806	·2	·5

Quebec: Supply of Steel Products

(tons of 2000 lbs.)

	Shipments by Canadian Mills	Imports	Supply Available	Imports as p.c. of Supply	Supply as p.c. of Canadian Total
	Calendar Year 1951				
Pig iron	113,793	19,286	133,079	14·5	26·8
Ingots, blooms, billets	10,923	349	11,272	3·1	3·5
Rails	33,011	508	33,519	1·5	12·6
Track material	13,097	861	13,958	6·2	13·4
Bars and rods	197,343	57,083	254,426	22·4	30·3
Structurals	69,051	145,686	214,737	67·8	36·1
Sheet, plate and strip	106,801	162,220	269,021	60·3	25·4
Galvanized	24,819	6,507	31,326	20·8	27·8
	Calendar Year 1952				
Pig iron	83,653	670	84,323	·8	24·0
Ingots, blooms, billets	19,363	1,637	21,000	7·8	5·5
Rails	57,156	1,418	58,574	2·4	22·1
Track material	21,973	748	22,721	3·3	19·9
Bars and rods	196,989	33,992	230,981	14·7	28·6
Structurals	61,601	110,904	172,505	64·3	32·3
Sheet, plate and strip	105,883	114,696	220,579	52·0	21·6
Galvanized	12,041	6,463	18,504	34·9	17·9
	Calendar Year 1953				
Pig iron	69,728	10,095	79,823	12·6	23·4
Ingots, blooms, billets	23,231	111	23,342	·5	24·8
Rails	70,899	370	71,269	·5	22·9
Track material	16,490	996	17,486	5·7	20·0
Bars and rods	196,143	18,832	214,975	8·8	28·3
Structurals	80,074	115,300	195,374	59·0	34·6
Sheet, plate and strip	133,327	94,852	228,179	41·6	20·0
Galvanized	11,722	7,241	18,963	38·2	17·7
	Calendar Year 1954				
Pig iron	51,647	6,555	58,202	11·3	22·2
Ingots, blooms, billets	13,628	164	13,792	1·2	28·9
Rails	31,678	388	32,066	1·2	13·3
Track material	2,708	261	2,969	8·8	4·6
Bars and rods	158,285	14,137	172,422	8·2	30·0
Structurals	47,525	106,691	154,216	69·2	30·4
Sheet, plate and strip	114,657	54,343	169,000	32·2	19.9
Galvanized	15,568	3,795	19,363	19·6	16·3
	Calendar Year 1955				
Pig iron	85,139	652	85,791	0·8	23·9
Ingots, blooms, billets	1,945	145	2,090	6·9	3·9
Rails	15,354	451	15,805	2·8	8·5
Track material	4,663	132	4,795	2·7	6·1
Bars and rods	155,944	14,308	170,252	8·4	26·9
Structurals	65,719	110,779	176,498	62·8	32·6
Sheet, plate and strip	144,907	79,955	224,862	35·5	19·1
Galvanized	20,827	3,282	24,109	13·6	13·9

Ontario: Supply of Steel Products

(tons of 2000 lbs.)

	Shipments by Canadian Mills	Imports	Supply Available	Imports as p.c. of Supply	Supply as p.c. of Canadian Total
	Calendar Year 1951				
Pig iron	344,850	2,158	347,008	·6	69·8
Ingots, blooms, billets	189,845	118,602	308,447	38·4	96·3
Rails	158,938	3,599	162,537	2·2	61·1
Track material	42,832	1,119	43,951	2·5	42·3
Bars and rods	421,961	104,182	526,143	19·8	62·7
Structurals	109,218	161,133	270,351	59·6	45·5
Sheet, plate and strip	334,177	337,715	671,892	50·3	63·4
Galvanized	46,590	12,409	58,999	21·0	52·3
	Calendar Year 1952				
Pig iron	254,528	945	255,473	·4	72·6
Ingots, blooms, billets	212,928	143,726	356,654	40·3	94·0
Rails	155,347	4,389	159,736	2·7	60·3
Track material	45,789	1,961	47,750	4·1	41·9
Bars and rods	413,733	109,178	522,911	20·9	64·7
Structurals	95,122	134,775	229,897	58·6	43·1
Sheet, plate and strip	351,405	301,898	653,303	46·2	64·1
Galvanized	52,564	9,401	61,965	15·2	59·8
	Calendar Year 1953				
Pig iron	237,491	11,592	249,083	4·6	72·9
Ingots, blooms, billets	41,275	28,360	69,635	40·7	74·1
Rails	170,110	2,973	173,083	1·7	55·7
Track material	26,849	6,025	32,874	18·3	37·2
Bars and rods	430,375	71,756	502,131	14·3	66·1
Structurals	144,314	130,849	275,163	47·5	48·7
Sheet, plate and strip	512,899	254,269	767,168	33·1	67·4
Galvanized	52,264	11,963	64,227	18·6	60·0
	Calendar Year 1954				
Pig iron	184,078	7,564	191,642	3·9	73·1
Ingots, blooms, billets	27,983	4,307	32,290	13·3	67·6
Rails	134,208	1,922	136,130	1·4	56·5
Track material	21,103	450	21,553	2·1	33·2
Bars and rods	329,246	31,470	360,716	8·7	62·8
Structurals	98,277	145,008	243,285	59·6	48·0
Sheet, plate and strip	417,834	142,410	560,244	25·4	66·1
Galvanized	61,777	10,516	72,293	14·5	61·0
	Calendar Year 1955				
Pig iron	250,751	11,076	261,827	4·2	72·9
Ingots, blooms, billets	46,939	3,619	50,558	7·1	[illegible]
Rails	100,917	1,492	102,409	1·4	[illegible]
Track material	33,474	972	34,446	2·8	43·9
Bars and rods	354,159	52,146	406,305	12·8	[illegible]
Structurals	98,379	132,105	230,484	57·3	[illegible]
Sheet, plate and strip	598,634	215,530	814,164	26·5	[illegible]
Galvanized	92,312	16,220	108,532	14·9	[illegible]

Manitoba: Supply of Steel Products

(tons of 2000 lbs.)

	Shipments by Canadian Mills	Imports	Supply Available	Imports as p.c. of Supply	Supply as p.c. of Canadian Total
			Calendar Year 1951		
Pig iron	6,714	—	6,714	—	1·4
Ingots, blooms, billets	27	—	27	—	—
Rails	36,614	178	36,792	·5	13·8
Track material	35,580	178	35,758	·5	34·4
Bars and rods	2,194	2,353	4,547	51·7	·5
Structurals	3,946	14,155	18,101	78·2	3·0
Sheet, plate and strip	13,550	12,844	26,394	48·7	2·5
Galvanized	6,069	1,431	7,500	19·1	6·6
			Calendar Year 1952		
Pig iron	5,829	—	5,829	—	1·6
Ingots, blooms, billets	883	—	883	—	·2
Rails	23,806	145	23,951	·6	9·0
Track material	30,536	335	30,871	1·1	27·1
Bars and rods	2,838	973	3,811	25·5	·5
Structurals	2,214	17,413	19,627	88·7	3·7
Sheet, plate and strip	16,466	17,172	33,638	51·0	3·3
Galvanized	6,651	1,495	8,146	18·3	7·9
			Calendar Year 1953		
Pig iron	5,109	—	5,109	—	1·5
Ingots, blooms, billets	558	—	558	—	·6
Rails	24,503	810	25,313	3·2	8·1
Track material	25,785	226	26,011	·9	29·4
Bars and rods	2,822	952	3,774	25·2	·5
Structurals	2,131	9,647	11,778	81·9	2·1
Sheet, plate and strip	20,000	17,263	37,263	46·3	3·3
Galvanized	6,016	2,061	8,077	25·5	7·5
			Calendar Year 1954		
Pig iron	4,153	339	4,492	7·5	1·7
Ingots, blooms, billets	361	—	361	—	·7
Rails	26,489	207	26,696	·8	11·1
Track material	25,304	293	25,597	1·1	39·4
Bars and rods	2,393	1,294	3,687	35·1	·6
Structurals	1,670	15,238	16,908	90·1	3·3
Sheet, plate and strip	15,014	13,335	28,349	47·0	3·3
Galvanized	5,501	3,061	8,562	35·7	7·2
			Calendar Year 1955		
Pig iron	5,146	59	5,205	1·1	1·4
Ingots, blooms, billets	227	—	227	—	·4
Rails	33,325	554	33,879	1·6	18·3
Track material	26,278	92	26,370	·3	33·6
Bars and rods	2,764	582	3,346	17·4	·5
Structurals	1,125	18,921	20,046	94·4	3·7
Sheet, plate and strip	17,206	11,656	28,862	40·4	2·4
Galvanized	10,194	1,925	12,119	15·9	7·0

Saskatchewan: Supply of Steel Products

(tons of 2000 lbs.)

	Shipments by Canadian Mills	Imports	Supply Available	Imports as p.c. of Supply	Supply as p.c. of Canadian Total
	Calendar Year 1951				
Rails	—	—	—	—	—
Track material	41	—	41	—	—
Bars and rods	877	4	881	·4	·1
Structurals	406	98	504	19·4	·1
Sheet, plate and strip	1,470	2,619	4,089	64·0	·4
Galvanized	2,630	126	2,756	4·6	2·4
	Calendar Year 1952				
Rails	320	—	320	—	·1
Track material	64	1	65	1·5	·1
Bars and rods	1,200	12	1,212	1·0	·2
Structurals	511	110	621	17·7	·1
Sheet, plate and strip	1,691	3,225	4,916	65·6	·5
Galvanized	2,738	—	2,738	—	2·6
	Calendar Year 1953				
Rails	27	1	28	3·6	—
Track material	1	—	1	—	—
Bars and rods	873	67	940	7·1	·1
Structurals	341	247	588	42·0	·1
Sheet, plate and strip	2,498	3,472	5,970	58·2	·5
Galvanized	3,593	427	4,020	10·6	3·7
	Calendar Year 1954				
Rails	3	15	18	83·3	—
Track material	3	—	3	—	—
Bars and rods	532	110	642	17·1	·1
Structurals	306	440	746	59·0	·1
Sheet, plate and strip	1,344	2,495	3,839	65·0	·4
Galvanized	3,350	412	3,762	10·9	3·2
	Calendar Year 1955				
Rails	37	—	37	—	—
Track material	30	—	30	—	—
Bars and rods	1,081	9	1,090	·8	·2
Structurals	233	617	850	72·6	·1
Sheet, plate and strip	1,026	2,524	3,550	71·1	·3
Galvanized	5,571	696	6,267	11·1	3·6

Alberta: Supply of Steel Products

(tons of 2000 lbs.)

	Shipments by Canadian Mills	Imports	Supply Available	Imports as p.c. of Supply	Supply as p.c. of Canadian Total
			Calendar Year 1951		
Pig Iron	312	—	312	—	·1
Ingots, blooms, billets	1	—	1	—	—
Rails	482	69	551	12·5	·2
Track material	1,005	31	1,036	3·0	1·0
Bars and rods	1,315	906	2,221	40·8	·3
Structurals	1,487	5,913	7,400	79·9	1·2
Sheet, plate and strip	2,551	5,777	8,328	69·4	·8
Galvanized	3,770	167	3,937	4·2	3·5
			Calendar Year 1952		
Pig iron	296	—	296	—	·1
Ingots, blooms, billets	17	—	17	—	—
Rails	81	191	272	70·2	·1
Track material	1,506	20	1,526	1·3	1·3
Bars and rods	1,450	1,116	2,566	43·5	·3
Structurals	1,630	5,820	7,450	78·1	1·4
Sheet, plate and strip	2,935	9,970	12,905	77·2	1·3
Galvanized	3,923	187	4,110	4·5	4·0
			Calendar Year 1953		
Pig iron	306	—	306	—	·1
Ingots, blooms, billets	9	—	9	—	—
Rails	1,363	43	1,406	3·0	·5
Track material	1,181	26	1,207	2·1	1·4
Bars and rods	1,808	961	2,769	34·7	·4
Structurals	1,318	12,327	13,645	90·3	2·4
Sheet, plate and strip	5,308	11,092	16,400	67·6	1·4
Galvanized	3,178	417	3,595	11·6	3·6
			Calendar Year 1954		
Pig iron	89	—	89	—	—
Ingots, blooms, billets	7	—	7	—	—
Rails	7,312	25	7,337	·3	3·0
Track material	1,280	10	1,290	·8	2·0
Bars and rods	1,709	1,104	2,813	39·2	·5
Structural	756	19,839	20,595	96·3	4·1
Sheet, plate and strip	4,107	9,139	13,246	69·0	1·6
Galvanized	4,713	756	5,469	13·8	4·6
			Calendar Year 1955		
Pig iron	48	215	263	81·7	·1
Ingots, blooms, billets	—	—	—	—	—
Rails	522	63	585	10·8	·3
Track material	1,606	3	1,609	·2	2·0
Bars and rods	2,053	878	2,931	29·9	·5
Structurals	1,241	24,402	25,643	95·2	4·7
Sheet, plate and strip	5,345	16,445	21,790	75·5	1·8
Galvanized	9,045	433	9,478	4·6	5·5

British Columbia: Supply of Steel Products

(tons of 2000 lbs.)

	Shipments by Canadian Mills	Imports	Supply Available	Imports as p.c. of Supply	Supply as p.c. of Canadian Total
	Calendar Year 1951				
Pig iron	796	726	1,522	47·7	·3
Ingots, blooms, billets	177	7	184	3·8	·1
Rails	446	2,899	3,345	86·7	1·2
Track material	241	1,220	1,461	83·5	1·4
Bars and rods	16,539	12,156	28,695	42·4	3·4
Structurals	5,462	37,896	43,358	87·4	7·3
Sheet, plate and strip	14,078	32,382	46,460	69·7	4·4
Galvanized	4,094	2,152	6,246	34·4	5·5
	Calendar Year 1952				
Pig iron	135	56	191	29·3	·1
Ingots, blooms, billets	105	2	107	1·9	—
Rails	323	4,360	4,683	93·1	1·8
Track material	179	2,755	2,934	93·9	2·6
Bars and rods	11,847	11,879	23,726	50·1	2·9
Structurals	8,772	59,177	67,949	87·1	12·7
Sheet, plate and strip	14,507	44,992	59,499	75·6	5·8
Galvanized	4,179	1,784	5,963	29·9	5·7
	Calendar Year 1953				
Pig iron	123	446	569	78·4	·2
Ingots, blooms, billets	32	17	49	34·7	·1
Rails	344	5,631	5,975	94·2	1·9
Track material	161	2,186	2,347	93·1	2·6
Bars and rods	9,018	9,248	18,266	50·6	2·4
Structurals	2,091	31,063	33,154	93·7	5·9
Sheet, plate and strip	13,057	36,295	49,352	73·5	4·3
Galvanized	3,708	2,413	6,121	39·4	5·7
	Calendar Year 1954				
Pig iron	—	1,123	1,123	100·0	·4
Ingots, blooms, billets	19	1,061	1,080	98·2	2·3
Rails	172	12,219	12,391	98·6	5·1
Track material	106	3,753	3,859	97·2	5·9
Bars and rods	7,930	11,018	18,948	58·1	3·3
Structurals	761	42,646	43,407	98·2	8·6
Sheet, plate and strip	11,135	41,281	52,416	78·7	6·2
Galvanized	3,958	2,697	6,655	40·5	5·6
	Calendar Year 1955				
Pig iron	309	447	756	59·1	·2
Ingots, blooms, billets	31	—	31	—	—
Rails	1,151	19,726	20,877	94·5	11·3
Track material	2,084	3,974	6,058	65·6	7·7
Bars and rods	18,214	12,108	30,322	39·9	4·8
Structurals	3,460	59,891	63,351	94·5	11·7
Sheet, plate and strip	28,752	36,107	64,859	55·7	5·5
Galvanized	8,483	1,557	10,040	15·5	5·8

CONSUMPTION OF PRIMARY IRON AND STEEL PRODUCTS BY INDUSTRIES

1. It is not possible to trace steel consumption in Canada with anything approaching complete accuracy, since statistical data simply are not available in sufficiently refined detail for this purpose. The following tables do serve, however, to identify the more important consumers of steel and indicate, usually within a margin of error of from 5 to 20 p.c., the quantities of steel used by each specified industrial grouping.

2. The figures in this Appendix show the tonnages of steel used by the larger industrial groups, as reported to the Dominion Bureau of Statistics. The only figures obtained by the Board direct from users are those showing consumption of steel by the motor vehicle industry in 1953-54 and by the railway transport group. Consumption by the primary iron and steel industry is excluded.

3. The tables do not attempt to trace the steel used by *all* industries. There are numerous industries which use steel but which do not report their usage in a manner which lends itself to breakdown. Even in the case of the industries listed in the tables, many of the smaller firms do not report in detail to the Dominion Bureau of Statistics; in some instances, the Bureau has estimated the materials used by such firms and these estimates are included in the tables. A further shortfall of the statistics is that consumption of tool and stainless steels and of many alloy steels is not reported to the Dominion Bureau of Statistics by tonnages and is therefore not reflected in the tables. Also, no data on tonnages could be obtained for certain other forms of primary steel, e.g., direct castings. Lastly, the consumption figure for ingots, billets, blooms and slabs are so incomplete that they have been omitted from the tables since their inclusion would be seriously misleading.

4. The heading "other flat-rolled products" has been used by some industries to report all their consumption of flat-rolled steel; other industries have used it to report part of their consumption of such products. All coated sheet and strip, except enamelled, is excluded.

5. Figures for steel consumption by the motor vehicles industry are for steel in basic forms only; they do not include steel purchased by the industry in the form of fabricated parts.

6. The figures for rails take into account only those rails laid in track, and exclude those laid in private sidings as well as those used for industrial purposes. Rails used in the Quebec North Shore and Labrador Railway are not included in these tables since they were not reported to the Dominion Bureau of Statistics until 1955. Partly for this reason, the consumption of rails is understated by fairly substantial tonnages. Track material is included with rails in the totals for Canada; the provincial breakdowns show tonnages of rails only.

7. The consumption of structural steels is considerably understated. In part, this may be due to differences in methods of reporting various small sections —regarded by some firms as "structural shapes" and by others as "bars".

Consumption of Primary Iron and Steel Products by Industry and by Product—1951

(tons of 2000 lbs.)

Canada Total

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Terne- and Tinplate	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):													
Agricultural Implements.....	24,702	—	22,702	90,847	—	25,684	58	7,578	6,059	7,339	—	—	184,969
Boilers and Plate Work......	36,262	—	4,142	3,516	—	14,276	85	1,214	40	60,169	—	—	119,704
Bridges and Structural Steel..	1,078	—	227,783	35,914	—	5,391	—	80	524	77,075	—	—	347,845
Hardware and Tools.........	2,533	—	—	58,995	—	19,552	—	—	8,268	3,137	—	—	92,485
Heating and Cooking Apparatus......................	17,542	—	295	923	—	27,030	80	2,594	2,267	410	8,767	—	59,908
Machinery..................	33,209	—	19,951	27,608	—	14,764	187	4,037	1,850	18,389	—	—	119,995
Iron Castings and Pipe Mills..	258,597	—	2,299	16,420	—	3,132	34	124	57	3,398	2	237,982	522,045
Sheet Metal Products........	—	—	8,685	19,870	—	108,259	251,549	58,160	6,167	6,996	9,240	—	468,926
Wire and Wire Products......	—	—	—	6,743	313,690	4,304	—	—	3,925	3,167	—	—	331,829
Miscellaneous Iron and Steel Products..................	17,512	—	8,923	101,717	—	6,341	734	100	1,093	8,284	—	—	144,702
	391,435	—	294,780	362,553	313,690	228,733	252,727	73,887	30,250	188,362	18,009	237,982	2,392,408
Transportation Equipment Group:													
Motor Vehicles.............	4,925	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4,925
Motor Vehicle Parts and Accessories................	24,322	—	12,319	51,541	—	41,609	2,323	126	21,227	5,829	—	—	159,296
Railway Rolling Stock......	27,874	—	49,849	55,138	—	28,495	—	22,005	2,814	58,612	—	—	244,787
Shipbuilding................	781	—	15,347	2,702	—	1,841	7	369	171	50,883	—	—	72,101
	57,902	—	77,515	109,381	—	71,945	2,330	22,500	24,212	115,324	—	—	481,109
Other Industries													
Electrical Apparatus and Supplies..................	9,100	—	13,164	16,400	8,614	109,252	—	—	12,665	—	—	—	169,195
Non-Ferrous Metal Products.	4,394	—	—	551	—	—	—	—	—	—	1,124	—	6,069
Railway Transport..........	—	329,933	—	—	—	—	—	—	—	—	—	—	329,933
Electric Railways...........	—	5,579	—	—	—	—	—	—	—	—	—	—	5,579
	13,494	335,512	13,164	16,951	8,614	109,252	—	—	12,665	—	1,124	—	510,776
Total........................	462,831	335,512	385,459	488,885	322,304	409,930	255,057	96,387	67,127	303,686	19,133	237,982	3,384,293

Consumption of Primary Iron and Steel Products by Industry and by Product—1951

(tons of 2000 lbs.)

Newfoundland

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Heating and Cooking Apparatus	—	—	—	—	—	—	—	—	—	11	—	11
Machinery	—	—	—	120	—	45	—	—	160	—	—	325
Wire and Wire Products	—	—	—	100	1,675	110	—	15	—	—	—	1,900
Railway Transport	—	2,252	—	—	—	—	—	—	—	—	—	2,252
Total	—	2,252	—	220	1,675	155	—	15	160	11	—	4,488

Prince Edward Island

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Agricultural Implements	—	—	2	17	—	3	—	—	—	—	—	22
Iron Castings and Pipe Mills	22	—	5	20	—	10	10	—	25	—	—	92
Total	22	—	7	37	—	13	10	—	25	—	—	114

New Brunswick

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Hardware and Tools	—	—	—	—	—	—	—	—	2	—	—	2
Heating and Cooking Apparatus	2,295	—	—	169	—	4,134	514	3	6	789	—	7,910
Machinery	—	—	235	—	—	28	—	—	—	—	—	263
Iron Castings and Pipe Mills	9	—	60	36	—	5	1	—	9	—	—	120
Sheet Metal Products	—	—	5	—	—	8	37	—	9	14	—	73
Wire and Wire Products	—	—	—	—	8,402	—	—	—	—	—	—	8,402
Motor Vehicle Parts and Accessories	—	—	—	—	—	—	63	38	—	—	—	101
Shipbuilding	30	—	140	288	—	38	8	—	1,282	—	—	1,786
Non-Ferrous Metal Products	1,198	—	—	45	—	—	—	—	—	—	—	1,243
Railway Transport	—	10,571	—	—	—	—	—	—	—	—	—	10,571
Total	3,532	10,571	440	538	8,402	4,213	623	41	1,308	803	—	30,471

Consumption of Primary Iron and Steel Products by Industry and by Product—1951

(tons of 2000 lbs.)

Nova Scotia

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Bridges and Structural Steel	78	—	5,060	50	—	9	—	—	998	—	—	6,195
Hardware and Tools	—	—	—	1,724	—	—	—	—	—	—	—	1,724
Heating and Cooking Apparatus	82	—	—	4	—	15	12	—	—	20	—	133
Machinery	171	—	—	40	—	183	9	—	15	—	—	418
Iron Castings and Pipe Mills	500	—	80	40	—	46	7	—	348	—	—	1,021
Sheet Metal Products	—	—	—	—	—	—	54	—	—	8	—	62
Wire and Wire Products	—	—	—	—	46,286	—	—	—	—	—	—	46,286
Miscellaneous Iron and Steel Products	1,210	—	3,095	33,024	—	463	—	—	920	—	—	38,712
	2,041	—	8,235	34,882	46,286	716	82	—	2,281	28	—	94,551
Transportation Equipment Group:												
Railway Rolling Stock	2,989	—	15,615	5,662	—	3,935	—	—	14,288	—	—	42,489
Shipbuilding	250	—	914	352	—	789	67	—	3,623	—	—	5,995
	3,239	—	16,529	6,014	—	4,724	67	—	17,911	—	—	48,484
Other Industries:												
Electrical Apparatus and Supplies	—	—	1	1	1	4	—	—	—	—	—	7
Railway Transport	—	6,640	—	—	—	—	—	—	—	—	—	6,640
	—	6,640	1	1	1	4	—	—	—	—	—	6,647
Total	5,280	6,640	24,765	40,897	46,287	5,444	149	—	20,192	28	—	149,682

Consumption of Primary Iron and Steel Products by Industry and by Product—1951

(tons of 2000 lbs.)

Quebec

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	337	—	—	1,237	—	655	57	—	—	—	—	2,286
Boilers and Plate Work	17,189	—	187	363	—	1,775	357	18	4,419	—	—	24,308
Bridges and Structural Steel	—	—	66,341	10,874	—	112	—	—	25,684	—	—	103,011
Hardware and Tools	88	—	—	15,806	—	3,370	—	1,760	609	—	—	21,633
Heating and Cooking Apparatus	3,858	—	33	173	—	2,352	370	768	13	3,270	—	10,837
Machinery	17,029	—	6,417	7,755	—	2,029	591	1,262	3,845	—	—	38,928
Iron Castings and Pipe Mills	55,585	—	34	11,671	—	20	11	—	409	2	58,186	125,918
Sheet Metal Products	—	—	937	685	—	28,419	7,093	674	872	3	—	38,683
Wire and Wire Products	—	—	—	290	88,752	216	—	51	2,484	—	—	91,793
Miscellaneous Iron and Steel Products	693	—	1,503	3,384	—	1,708	23	76	1,912	—	—	9,299
	94,779	—	75,452	52,238	88,752	40,656	8,502	4,609	40,247	3,275	58,186	466,696
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	—	—	—	1,299	—	59	3	—	125	—	—	1,486
Railway Rolling Stock	9,355	—	17,886	40,886	—	1,578	11,484	1,758	27,769	—	—	110,716
Shipbuilding	68	—	5,114	813	—	582	162	168	13,389	—	—	20,296
	9,423	—	23,000	42,998	—	2,219	11,649	1,926	41,283	—	—	132,498
Other Industries:												
Electrical Apparatus and Supplies	222	—	744	2,566	5,549	17,712	—	5,279	—	—	—	32,072
Non-Ferrous Metal Products	3,180	—	—	160	—	370	—	—	—	11	—	3,721
Railway Transport	—	22,448	—	—	—	—	—	—	—	—	—	22,448
Electric Railways	—	37	—	—	—	—	—	—	—	—	—	37
	3,402	22,485	744	2,726	5,549	18,082	—	5,279	—	11	—	58,278
Total	107,604	22,485	99,196	97,962	94,301	60,957	20,151	11,814	81,530	3,286	58,186	657,472

Consumption of Primary Iron and Steel Products by Industry and by Product—1951

(tons of 2000 lbs.)

Ontario

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	24,298	—	20,770	85,449	—	24,105	7,461	6,016	6,826	—	—	174,925
Boilers and Plate Work	19,073	—	3,246	3,017	—	11,423	849	22	48,596	—	—	86,226
Bridges and Structural Steel	1,000	—	121,043	4,907	—	2,933	80	370	29,562	—	—	159,895
Hardware and Tools	2,445	—	—	34,915	—	15,797	—	6,246	2,422	—	—	61,825
Heating and Cooking Apparatus	10,453	—	255	546	—	19,585	1,424	1,492	318	4,636	—	38,709
Machinery	14,945	—	11,832	17,082	—	10,603	2,005	519	9,948	—	—	66,934
Iron Castings and Pipe Mills	197,054	—	205	2,204	—	2,364	6	57	631	121	179,796	382,438
Sheet Metal Products	—	—	7,191	18,259	—	66,153	34,369	5,451	4,666	8,556	—	144,645
Wire and Wire Products	—	—	—	6,223	157,451	3,693	—	3,857	683	—	—	171,907
Miscellaneous Iron and Steel Products	14,929	—	1,458	51,656	—	3,585	64	666	3,074	—	—	75,432
	284,197	—	166,000	224,258	157,451	160,241	46,258	24,696	106,726	13,313	179,796	1,362,936
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	24,322	—	11,332	49,412	—	40,863	55	21,172	5,082	—	—	152,238
Railway Rolling Stock	12,134	—	15,550	6,470	—	22,634	10,232	39	13,871	—	—	80,930
Shipbuilding	429	—	8,298	632	—	44	47	—	30,158	—	—	39,608
	36,885	—	35,180	56,514	—	63,541	10,334	21,211	49,111	—	—	272,776
Other Industries:												
Electrical Apparatus and Supplies	8,878	—	12,319	13,573	3,037	88,328	—	7,340	—	—	—	114,475
Non-Ferrous Metal Products	16	—	—	305	—	410	—	—	—	255	—	986
Railway Transport	—	86,138	—	—	—	—	—	—	—	—	—	86,138
Electric Railways	—	4,378	—	—	—	—	—	—	—	—	—	4,378
	8,894	90,516	12,319	13,878	3,037	88,738	—	7,340	—	255	—	224,977
Total	329,976	90,516	213,499	294,650	160,488	312,520	56,592	53,247	155,837	13,568	179,796	1,860,689

Consumption of Primary Iron and Steel Products by Industry and by Product—1951

(tons of 2000 lbs.)

Manitoba

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	7	—	963	2,727	—	301	37	30	77	—	—	4,142
Boilers and Plate Work	—	—	125	—	—	376	—	—	1,498	—	—	1,999
Bridges and Structural Steel	—	—	5,875	6,328	—	1,457	—	—	3,918	—	—	17,578
Hardware and Tools	—	—	—	17	—	7	—	—	70	—	—	94
Heating and Cooking Apparatus	—	—	—	—	—	116	20	—	—	—	—	136
Machinery	628	—	116	131	—	1,019	51	3	169	—	—	2,117
Iron Castings and Pipe Mills	4,973	—	1,001	1,365	—	251	72	—	1,385	—	—	9,047
Sheet Metal Products	—	—	303	383	—	7,178	7,247	37	499	—	—	15,647
Wire and Wire Products	—	—	—	—	15	7	—	2	—	—	—	24
Miscellaneous Iron and Steel Products	680	—	637	8,615	—	291	3	—	1,214	—	—	11,440
	6,288	—	9,020	19,566	15	11,003	7,430	72	8,830	—	—	62,224
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	—	—	9	34	—	24	2	5	3	—	—	77
Railway Rolling Stock	3,253	—	635	1,846	—	236	230	783	1,060	—	—	8,043
	3,253	—	644	1,880	—	260	232	788	1,063	—	—	8,120
Other Industries:												
Electrical Apparatus and Supplies	—	—	100	250	27	2,302	—	1	—	—	—	2,680
Railway Transport	—	37,014	—	—	—	—	—	—	—	—	—	37,014
Electric Railways	—	13	—	—	—	—	—	—	—	—	—	13
	—	37,027	100	250	27	2,302	—	1	—	—	—	39,707
Total	9,541	37,027	9,764	21,696	42	13,565	7,662	861	9,893	—	—	110,051

Consumption of Primary Iron and Steel Products by Industry and by Product—1951

(tons of 2000 lbs.)

Saskatchewan

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Agricultural Implements	—	—	212	236	—	357	22	10	38	—	—	875
Boiler and Plate Work	—	—	120	—	—	336	—	—	345	—	—	801
Heating and Cooking Apparatus	—	—	—	—	—	3	2	—	—	—	—	5
Machinery	12	—	100	340	—	77	1,313	—	605	—	—	2,447
Iron Castings and Pipe Mills	10	—	105	521	—	120	—	—	170	—	—	926
Sheet Metal Products	—	—	35	171	—	2,719	2,742	—	219	52	—	5,938
Motor Vehicle Parts and Accessories	—	—	—	150	—	—	—	—	—	—	—	150
Railway Transport	—	21,589	—	—	—	—	—	—	—	—	—	21,589
Total	22	21,589	572	1,418	—	3,612	4,079	10	1,377	52	—	32,731

Alberta

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	60	—	668	1,065	—	257	1	3	396	—	—	2,450
Boilers and Plate Work	—	—	73	16	—	2	6	—	1,252	—	—	1,349
Bridges and Structural Steel	—	—	4,659	4,222	—	140	—	154	1,572	—	—	10,747
Hardware and Tools	—	—	—	10	—	—	—	—	—	—	—	10
Heating and Cooking Apparatus	—	—	—	2	—	170	41	—	1	—	—	214
Machinery	2	—	501	1,424	—	631	1	22	2,065	—	—	4,646
Iron Castings and Pipe Mills	—	—	609	394	—	156	5	—	180	—	—	1,344
Sheet Metal Products	—	—	1	142	—	1,549	4,291	1	153	18	—	6,155
Miscellaneous Iron and Steel Products	—	—	2,104	2,267	—	183	10	176	231	—	—	4,971
	62	—	8,615	9,542	—	3,088	4,355	356	5,850	18	—	31,886
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	—	—	—	285	—	45	3	—	—	—	—	333
Railway Rolling Stock	143	—	159	274	—	107	49	234	1,610	—	—	2,576
	143	—	159	559	—	152	52	234	1,610	—	—	2,909
Other Industries:												
Railway Transport	—	19,898	—	—	—	—	—	—	—	—	—	19,898
Total	205	19,898	8,774	10,101	—	3,240	4,407	590	7,460	18	—	54,693

Consumption of Primary Iron and Steel Products by Industry and by Product—1951

(tons of 2000 lbs.)

British Columbia

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	—	—	87	116	—	6	—	—	2	—	—	211
Boilers and Plate Work	—	—	391	120	—	364	2	—	4,059	—	—	4,936
Bridges and Structural Steel	—	—	24,805	9,533	—	740	—	—	15,341	—	—	50,419
Hardware and Tools	—	—	—	6,523	—	378	—	262	34	—	—	7,197
Heating and Cooking Apparatus	854	—	7	29	—	655	211	4	72	41	—	1,873
Machinery	422	—	750	716	—	149	67	44	1,582	—	—	3,730
Iron Castings and Pipe Mills	444	—	200	169	—	39	12	—	241	—	—	1,105
Sheet Metal Products	—	—	213	230	—	2,233	2,327	4	578	589	—	6,174
Wire and Wire Products	—	—	—	130	11,109	278	—	—	—	—	—	11,517
Miscellaneous Iron and Steel Products	—	—	126	2,771	—	111	—	175	931	—	—	4,114
	1,720	—	26,579	20,337	11,109	4,953	2,619	489	22,840	630	—	91,276
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	—	—	978	361	—	618	—	12	619	—	—	2,588
Railway Rolling Stock	—	—	4	—	—	5	10	—	14	—	—	33
Shipbuilding	4	—	881	617	—	388	85	3	2,431	—	—	4,409
	4	—	1,863	978	—	1,011	95	15	3,064	—	—	7,030
Other industries:												
Electrical Apparatus and Supplies	—	—	—	10	—	906	—	45	—	—	—	961
Non-Ferrous Metal Products	—	—	—	41	—	78	—	—	—	—	—	119
Railway Transport	—	15,622	—	—	—	—	—	—	—	—	—	15,622
Electric Railways	—	1,151	—	—	—	—	—	—	—	—	—	1,151
	—	16,773	—	51	—	984	—	45	—	—	—	17,853
Total	1,724	16,773	28,442	21,366	11,109	6,948	2,714	549	25,904	630	—	116,159

Consumption of Primary Iron and Steel Products by Industry and by Product—1952

(tons of 2000 lbs.)

Canada Total

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Terne- and Tinplate	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):													
Agricultural Implements.....	27,914	—	29,914	116,439	—	32,246	26	9,597	6,282	8,141	—	—	230,559
Boiler and Plate Work.......	25,577	—	9,705	5,079	—	14,839	222	1,204	67	77,404	—	—	134,097
Bridges and Structural Steel..	1,353	—	270,767	53,581	—	8,434	—	326	2,411	78,454	—	—	415,326
Hardware and Tools.........	1,849	—	2,120	62,483	—	14,103	124	357	7,482	4,420	—	—	92,938
Heating and Cooking Apparatus......................	14,861	—	336	1,068	—	36,624	319	4,360	1,532	296	—	—	59,396
Machinery..................	27,868	—	31,115	31,912	—	15,917	273	3,755	2,847	20,994	—	—	134,681
Iron Castings and Pipe Mills..	204,295	—	2,722	16,612	—	3,233	40	212	860	3,874	—	291,181	523,029
Sheet Metal Products........	—	—	10,557	22,481	—	116,160	236,780	67,461	6,711	9,842	—	—	469,992
Wire and Wire Products......	—	—	—	5,703	308,474	2,940	—	—	6,600	1,811	—	—	325,528
Miscellaneous Iron and Steel Products.................	12,790	—	10,887	123,558	—	8,187	98	548	1,018	9,021	—	—	166,107
	316,507	—	368,123	438,916	308,474	252,683	237,882	87,820	35,810	214,257	—	291,181	2,551,653
Transportation Equipment Group:													
Motor Vehicles.............	7,576	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	7,576
Motor Vehicle Parts and Accessories...............	25,071	—	12,788	53,270	—	40,640	2,303	101	19,939	7,359	—	—	161,471
Railway Rolling Stock......	17,945	—	43,792	57,709	—	4,759	—	10,905	2,552	71,982	—	—	208,644
Shipbuilding................	834	—	20,130	6,343	—	3,187	6	597	412	66,870	—	—	98,379
	51,426	—	75,710	117,322	—	48,586	2,309	11,603	22,903	146,211	—	—	476,070
Other Industries:													
Electrical Apparatus and Supplies...................	8,104	—	4,203	20,295	—	94,282	—	—	15,416	—	—	—	142,300
Non-Ferrous Metal Products.	3,626	—	—	663	—	414	—	—	—	—	790	—	5,493
Railway Transport...........	—	305,874	—	—	—	—	—	—	—	—	—	—	305,874
Electric Railways...........	—	3,479	—	—	—	—	—	—	—	—	—	—	3,479
	11,730	309,353	4,203	20,958	—	94,696	—	—	15,416	—	790	—	457,146
Total.......................	379,663	309,353	448,036	577,196	308,474	395,965	240,191	99,423	74,129	360,468	790	291,181	3,484,869

Consumption of Primary Iron and Steel Products by Industry and by Product—1952

(tons of 2000 lbs.)

Newfoundland

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Heating and Cooking Apparatus	—	—	—	—	—	11	—	—	—	—	—	11
Machinery	—	—	1	138	—	50	—	—	182	—	—	371
Wire and Wire Products	—	—	—	100	1,570	200	—	—	—	—	—	1,870
Railway Transport	—	964	—	—	—	—	—	—	—	—	—	964
Total	—	964	1	238	1,570	261	—	—	182	—	—	3,216

Prince Edward Island

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Agricultural Implements	—	—	—	3	—	—	—	—	—	—	—	3
Shipbuilding	30	—	10	40	—	30	20	—	50	—	—	180
Total	30	—	10	43	—	30	20	—	50	—	—	183

New Brunswick

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Heating and Cooking Apparatus	1,843	—	—	213	—	4,888	522	3	—	—	—	7,469
Machinery	—	—	245	—	—	29	—	—	288	—	—	562
Iron Castings and Pipe Mills	9	—	81	44	—	77	1	—	12	—	—	224
Sheet Metal Products	—	—	6	—	—	—	919	—	—	—	—	925
Wire and Wire Products	—	—	—	—	7,952	—	—	—	—	—	—	7,952
Motor Vehicle Parts and Accessories	—	—	3	3	—	—	5	15	10	—	—	36
Shipbuilding	25	—	869	368	—	45	19	—	2,069	—	—	3,395
Non-Ferrous Metal Products	1,077	—	—	59	—	—	—	—	—	—	—	1,136
Railway Transport	—	6,345	—	—	—	—	—	—	—	—	—	6,345
Total	2,954	6,345	1,204	687	7,952	5,039	1,466	18	2,379	—	—	28,044

Consumption of Primary Iron and Steel Products by Industry and by Product—1952

(tons of 2000 lbs.)

Nova Scotia

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Bridges and Structural Steel	77	—	5,248	60	—	35	—	—	1,215	—	—	6,635
Hardware and Tools	—	—	—	1,586	—	—	—	—	—	—	—	1,586
Heating and Cooking Apparatus	96	—	—	—	—	9	71	—	—	—	—	176
Machinery	121	—	3	158	—	183	10	113	9	—	—	597
Iron Castings and Pipe Mills	513	—	91	35	—	55	7	25	370	—	—	1,096
Sheet Metal Products	—	—	—	—	—	1	73	—	—	—	—	74
Wire and Wire Products	—	—	—	—	42,371	—	—	—	—	—	—	42,371
Miscellaneous Iron and Steel Products	940	—	2,137	36,942	—	—	489	—	1,003	—	—	41,511
	1,747	—	7,479	38,781	42,371	283	650	138	2,597	—	—	94,046
Transportation Equipment Group:												
Railway Rolling Stock	3,589	—	6,951	11,764	—	151	—	—	18,077	—	—	40,532
Shipbuilding	286	—	865	1,134	—	1,335	102	—	5,203	—	—	8,925
	3,875	—	7,816	12,898	—	1,486	102	—	23,280	—	—	49,457
Other Industries:												
Electrical Apparatus and Supplies	—	—	2	1	—	10	—	—	—	—	—	13
Railway Transport	—	6,123	—	—	—	—	—	—	—	—	—	6,123
	—	6,123	2	1	—	10	—	—	—	—	—	6,136
Total	5,622	6,123	15,297	51,680	42,371	1,779	752	138	25,877	—	—	149,639

Consumption of Primary Iron and Steel Products by Industry and by Product—1952

(tons of 2000 lbs.)

Quebec

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	310	—	—	1,007	—	591	117	—	45	—	—	2,070
Boilers and Plate Work	10,756	—	202	1,199	—	1,472	745	18	2,876	—	—	17,268
Bridges and Structural Steel	—	—	85,264	11,630	—	1,636	—	1,705	24,418	—	—	124,653
Hardware and Tools	1	—	149	15,187	—	2,844	343	2,462	243	—	—	21,229
Heating and Cooking Apparatus	3,773	—	13	124	—	5,543	861	257	15	—	—	10,586
Machinery	15,999	—	12,445	10,393	—	2,433	671	1,934	4,150	—	—	48,025
Iron Castings and Pipe Mills	36,928	—	27	12,519	—	28	3	—	566	—	45,571	95,642
Sheet Metal Products	—	—	1,053	718	—	26,753	8,124	810	1,312	—	—	38,770
Wire and Wire Products	—	—	—	278	88,657	44	—	55	1,446	—	—	90,480
Miscellaneous Iron and Steel Products	816	—	2,685	6,580	—	3,747	12	141	3,031	—	—	17,012
	68,583	—	101,838	59,635	88,657	45,091	10,876	7,382	38,102	—	45,571	465,735
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	—	—	—	1,287	—	33	—	—	—	—	—	1,320
Railway Rolling Stock	4,047	—	18,897	39,787	—	1,356	10,519	1,209	31,561	—	—	107,376
Shipbuilding	45	—	9,830	3,451	—	1,112	321	412	27,659	—	—	42,830
	4,092	—	28,727	44,525	—	2,501	10,840	1,621	59,220	—	—	151,526
Other Industries:												
Electrical Apparatus and Supplies	997	—	477	5,188	—	12,934	—	4,379	—	—	—	23,975
Non-Ferrous Metal Products	2,535	—	—	305	—	289	—	—	—	—	—	3,129
Railway Transport	—	16,258	—	—	—	—	—	—	—	—	—	16,258
Electric Railways	—	2	—	—	—	—	—	—	—	—	—	2
	3,532	16,260	477	5,493	—	13,223	—	4,379	—	—	—	43,364
Total	76,207	16,260	131,042	109,653	88,657	60,815	21,716	13,382	97,322	—	45,571	660,625

Consumption of Primary Iron and Steel Products by Industry and by Product—1952

(tons of 2000 lbs.)

Ontario

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	27,502	—	27,149	110,999	—	30,694	9,429	5,653	7,626	—	—	219,052
Boilers and Plate Work	14,821	—	8,613	3,656	—	10,868	455	38	63,799	—	—	102,250
Bridges and Structural Steel	1,276	—	120,463	8,512	—	2,785	326	213	23,038	—	—	156,613
Hardware and Tools	1,848	—	1,971	39,466	—	11,132	2	4,815	3,867	—	—	63,101
Heating and Cooking Apparatus	8,141	—	297	701	—	24,341	2,602	1,246	190	—	—	37,518
Machinery	10,817	—	16,361	19,177	—	11,848	1,649	345	11,632	—	—	71,829
Iron Castings and Pipe Mills	162,128	—	612	2,028	—	2,523	117	835	761	—	245,610	414,614
Sheet Metal Products	—	—	8,983	20,883	—	73,629	36,091	5,817	6,035	—	—	151,438
Wire and Wire Products	—	—	—	5,238	157,202	2,562	—	6,543	365	—	—	171,910
Miscellaneous Iron and Steel Products	10,348	—	2,202	62,100	—	4,048	42	711	2,389	—	—	81,840
	236,881	—	186,651	272,760	157,202	174,430	50,713	26,216	119,702	—	245,610	1,470,165
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	25,071	—	11,274	51,323	—	39,542	41	19,856	5,842	—	—	152,949
Railway Rolling Stock	9,785	—	15,920	4,167	—	2,908	30	47	19,263	—	—	52,120
Shipbuilding	448	—	6,484	721	—	470	35	—	28,146	—	—	36,304
	35,304	—	33,678	56,211	—	42,920	106	19,903	53,251	—	—	241,373
Other Industries:												
Electrical Apparatus and Supplies	7,107	—	3,649	15,035	—	78,423	—	10,663	—	—	—	114,877
Non-Ferrous Metal Products	14	—	—	281	—	91	—	—	—	790	—	1,176
Railway Transport	—	66,652	—	—	—	—	—	—	—	—	—	66,652
Electric Railways	—	2,360	—	—	—	—	—	—	—	—	—	2,360
	7,121	69,012	3,649	15,316	—	78,514	—	10,663	—	790	—	185,065
Total	279,306	69,012	223,978	344,287	157,202	295,864	50,819	56,782	172,953	790	245,610	1,896,603

Consumption of Primary Iron and Steel Products by Industry and by Product—1952

(tons of 2000 lbs.)

Manitoba

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	10	—	1,912	3,452	—	446	42	568	111	—	—	6,541
Boilers and Plate Work	—	—	166	—	—	1,261	—	—	1,114	—	—	2,541
Bridges and Structural Steel	—	—	18,247	7,483	—	991	—	—	6,272	—	—	32,993
Hardware and Tools	—	—	—	21	—	—	9	—	86	—	—	116
Heating and Cooking Apparatus	320	—	—	—	—	776	201	—	—	—	—	1,297
Machinery	645	—	191	246	—	923	48	2	93	—	—	2,148
Iron Castings and Pipe Mills	4,088	—	817	1,105	—	286	71	—	1,657	—	—	8,024
Sheet Metal Products	—	—	324	277	—	7,778	7,924	56	616	—	—	16,975
Wire and Wire Products	—	—	—	—	15	7	—	2	—	—	—	24
Miscellaneous Iron and Steel Products	686	—	674	9,225	—	237	3	—	1,455	—	—	12,280
	5,749	—	22,331	21,809	15	12,705	8,298	628	11,404	—	—	82,939
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	—	—	34	68	—	126	2	2	15	—	—	247
Railway Rolling Stock	384	—	830	1,714	—	235	301	1,050	1,330	—	—	5,844
	384	—	864	1,782	—	361	303	1,052	1,345	—	—	6,091
Other Industries:												
Electrical Apparatus and Supplies	—	—	75	38	—	2,020	—	311	—	—	—	2,444
Railway Transport	—	37,372	—	—	—	—	—	—	—	—	—	37,372
Electric Railways	—	27	—	—	—	—	—	—	—	—	—	27
	—	37,399	75	38	—	2,020	—	311	—	—	—	39,843
Total	6,133	37,399	23,270	23,629	15	15,086	8,601	1,991	12,749	—	—	128,873

Consumption of Primary Iron and Steel Products by Industry and by Product—1952

(tons of 2000 lbs.)

Saskatchewan

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Agricultural Implements	—	—	182	320	—	290	4	61	32	—	—	889
Boilers and Plate Work	—	—	168	—	—	470	—	—	483	—	—	1,121
Heating and Cooking Apparatus	—	—	—	—	—	3	—	—	—	—	—	3
Machinery	—	—	107	313	—	102	1,273	—	411	—	—	2,206
Iron Castings and Pipe Mills	—	—	25	564	—	140	—	—	230	—	—	959
Sheet Metal Products	—	—	—	152	—	4,000	4,892	—	400	—	—	9,444
Railway Transport	—	29,634	—	—	—	—	—	—	—	—	—	29,634
Total	—	29,634	482	1,349	—	5,005	6,169	61	1,556	—	—	44,256

Alberta

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	92	—	627	580	—	222	1	—	326	—	—	1,847
Boilers and Plate Work	—	—	73	22	—	21	—	11	1,527	—	—	1,654
Bridges and Structural Steel	—	—	6,634	5,969	—	410	—	493	2,368	—	—	15,874
Hardware and Tools	—	—	—	11	—	—	—	—	—	—	—	11
Heating and Cooking Apparatus	—	—	—	—	—	168	96	—	—	—	—	264
Machinery	4	—	432	559	—	125	—	23	645	—	—	1,788
Iron Castings and Pipe Mills	270	—	948	164	—	94	10	—	130	—	—	1,616
Sheet Metal Products	—	—	111	165	—	1,660	6,218	26	1,271	—	—	9,451
Miscellaneous Iron and Steel Products	—	—	2,899	5,360	—	110	1	157	233	—	—	8,760
	366	—	11,724	12,830	—	2,810	6,326	710	6,500	—	—	41,266
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	—	—	619	331	—	500	2	57	470	—	—	1,979
Railway Rolling Stock	140	—	188	277	—	104	45	246	1,736	—	—	2,736
	140	—	807	608	—	604	47	303	2,206	—	—	4,715
Other Industries:												
Railway Transport	—	19,716	—	—	—	—	—	—	—	—	—	19,716
Total	506	19,716	12,531	13,438	—	3,314	6,373	1,013	8,706	—	—	65,697

Consumption of Primary Iron and Steel Products by Industry and by Product—1952

(tons of 2000 lbs.)

British Columbia

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	—	—	44	78	—	3	4	—	1	—	—	30
Boilers and Plate Work	—	—	483	202	—	747	4	—	7,605	—	—	9,041
Bridges and Structural Steel	—	—	34,911	19,927	—	2,577	—	—	21,143	—	—	78,558
Hardware and Tools	—	—	—	6,212	—	127	3	205	224	—	—	6,771
Heating and Cooking Apparatus	688	—	26	30	—	885	7	26	91	—	—	1,753
Machinery	282	—	1,330	928	—	224	104	430	3,584	—	—	6,882
Iron Castings and Pipe Mills	359	—	121	153	—	30	3	—	148	—	—	814
Sheet Metal Products	—	—	80	286	—	2,339	3,220	2	208	—	—	6,135
Wire and Wire Products	—	—	—	87	10,707	127	—	—	—	—	—	10,921
Miscellaneous Iron and Steel Products	—	—	290	3,351	—	45	1	9	910	—	—	4,606
	1,329	—	37,285	31,254	10,707	7,104	3,346	672	33,914	—	—	125,611
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	—	—	858	258	—	439	51	9	1,022	—	—	2,637
Railway Rolling Stock	—	—	6	—	—	5	10	—	15	—	—	36
Shipbuilding	—	—	2,072	629	—	195	100	—	3,743	—	—	6,739
	—	—	2,936	887	—	639	161	9	4,780	—	—	9,412
Other Industries:												
Electrical Apparatus and Supplies	—	—	—	33	—	895	—	63	—	—	—	991
Non-Ferrous Metal Products	—	—	—	18	—	34	—	—	—	—	—	52
Railway Transport	—	19,296	—	—	—	—	—	—	—	—	—	19,296
Electric Railways	—	1,090	—	—	—	—	—	—	—	—	—	1,090
	—	20,386	—	51	—	929	—	63	—	—	—	21,429
Total	1,329	20,386	40,221	32,192	10,707	8,672	3,507	744	38,694	—	—	156,452

Consumption of Primary Iron and Steel Products by Industry and by Product—1953

(tons of 2000 lbs.)

Canada Total

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Terne- and Tinplate	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):													
Agricultural Implements.....	12,798	—	24,521	74,062	—	29,525	5	7,926	4,930	5,723	—	—	159,490
Boilers and Plate Work......	24,869	—	15,122	6,703	—	23,775	250	481	103	81,412	—	—	152,715
Bridges and Structural Steel..	1,468	—	282,740	50,992	—	8,284	—	276	4,588	84,962	—	—	433,310
Hardware and Tools.........	1,581	—	1,708	44,826	—	13,083	92	376	8,544	2,831	—	—	73,041
Heating and Cooking Apparatus......................	12,909	—	252	622	—	48,481	269	2,966	1,734	529	—	—	67,762
Machinery...................	20,638	—	28,109	24,075	—	18,030	141	3,618	1,690	15,593	—	—	111,894
Iron Castings and Pipe Mills..	204,687	—	1,951	12,711	—	5,451	35	216	1,528	1,997	—	263,542	429,118
Sheet Metal Products........	—	—	11,912	21,277	—	141,599	221,342	70,889	9,609	10,935	—	—	487,563
Wire and Wire Products......	—	—	—	3,814	270,665	2,155	—	—	5,571	1,679	—	—	283,884
Miscellaneous Iron and Steel Products..................	15,338	—	12,047	125,352	—	6,740	47	785	890	6,027	—	—	167,226
	294,288	—	378,362	364,434	270,665	297,123	222,181	87,533	39,187	211,688	—	263,542	2,429,003
Transportation Equipment Group:													
Motor Vehicles.............	13,071	—	—	8,768	—	25,865	—	59	1,678	—	46,519	—	95,960
Motor Vehicle Parts and Accessories................	31,880	—	13,075	52,014	—	45,614	2,444	1,387	27,222	6,311	—	—	179,947
Railway Rolling Stock......	9,797	—	28,190	45,587	—	13,171	—	8,779	1,214	55,775	—	—	162,513
Shipbuilding................	863	—	19,411	6,963	—	3,018	3	762	282	60,117	—	—	91,419
	55,611	—	60,676	113,332	—	87,668	2,447	10,987	30,396	122,203	46,519	—	529,839
Other Industries:													
Electrical Apparatus and Supplies..................	6,182	—	8,172	15,223	—	114,495	—	—	10,071	—	—	—	154,143
Non-Ferrous Metal Products.	4,075	—	—	1,129	—	—	—	—	—	—	1,576	—	6,780
Railway Transport..........	—	282,717	—	—	—	—	—	—	—	—	—	—	282,717
Electric Railways..........	—	2,909	—	—	—	—	—	—	—	—	—	—	2,909
	10,257	285,626	8,172	16,352	—	114,495	—	—	10,071	—	1,576	—	446,549
Total.........................	360,156	285,626	447,210	494,118	270,665	499,286	224,628	98,520	79,654	333,891	48,095	263,542	3,405,391

Consumption of Primary Iron and Steel Products by Industry and by Product—1953

(tons of 2000 lbs.)

Newfoundland

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Heating and Cooking Apparatus	—	—	—	—	—	—	12	—	—	—	—	12
Machinery	—	—	19	154	—	71	1	—	216	—	—	461
Wire and Wire Products	—	—	—	100	1,630	175	—	5	—	—	—	1,910
Railway Transport	—	620	—	—	—	—	—	—	—	—	—	620
Total	—	620	19	254	1,630	246	13	5	216	—	—	3,003

Prince Edward Island

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Agricultural Implements	—	—	—	2	—	—	—	—	—	—	—	2
Shipbuilding	31	—	8	25	—	10	—	—	20	—	—	94
Total	31	—	8	27	—	10	—	—	20	—	—	96

New Brunswick

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Heating and Cooking Apparatus	1,785	—	—	42	—	5,963	280	24	4	—	—	8,098
Machinery	3	—	144	—	—	17	—	—	169	—	—	333
Iron Castings and Pipe Mills	8	—	103	50	—	9	2	—	14	—	—	186
Sheet Metal Products	—	—	9	—	—	—	30	5	9	—	—	53
Wire and Wire Products	—	—	—	—	6,452	—	—	—	—	—	—	6,452
Motor Vehicle Parts and Accessories	—	—	—	3	—	11	7	15	6	—	—	42
Shipbuilding	160	—	620	362	—	—	25	—	1,631	—	—	2,798
Non-Ferrous Metal Products	1,327	—	—	69	—	—	—	—	—	—	—	1,396
Railway Transport	—	8,726	—	—	—	—	—	—	—	—	—	8,726
Total	3,283	8,726	876	526	6,452	6,000	344	44	1,833	—	—	28,084

Consumption of Primary Iron and Steel Products by Industry and by Product—1953

(tons of 2000 lbs.)

Nova Scotia

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Bridges and Structural Steel	136	—	5,435	82	—	30	—	—	2,036	—	—	7,719
Hardware and Tools	—	—	—	1,370	—	—	—	—	—	—	—	1,370
Heating and Cooking Apparatus	94	—	—	5	—	215	625	—	—	—	—	939
Machinery	144	—	1	29	—	121	11	110	10	—	—	426
Iron Castings and Pipe Mills	407	—	60	40	—	46	8	—	400	—	—	961
Sheet Metal Products	—	—	—	—	—	—	123	—	—	—	—	123
Wire and Wire Products	—	—	—	—	26,266	—	—	—	—	—	—	26,266
Miscellaneous Iron and Steel Products	—	—	1,983	39,229	—	2	659	—	683	—	—	42,556
	781	—	7,479	40,755	26,266	414	1,426	110	3,129	—	—	80,360
Transportation Equipment Group:												
Railway Rolling Stock	1,829	—	4,815	16,069	—	2	—	—	20,201	—	—	42,916
Shipbuilding	367	—	580	1,205	—	1,551	115	—	2,727	—	—	6,545
	2,196	—	5,395	17,274	—	1,553	115	—	22,928	—	—	49,461
Other Industries:												
Electrical Apparatus and Supplies	—	—	5	1	—	10	—	—	—	—	—	16
Railway Transport	—	7,888	—	—	—	—	—	—	—	—	—	7,888
	—	7,888	5	1	—	10	—	—	—	—	—	7,904
Total	2,977	7,888	12,879	58,030	26,266	1,977	1,541	110	26,057	—	—	137,725

Consumption of Primary Iron and Steel Products by Industry and by Product—1953

(tons of 2000 lbs.)

Quebec

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	92	—	—	1,197	—	790	101	—	101	—	—	2,281
Boilers and Plate Work	15,059	—	185	1,786	—	3,561	358	15	3,770	—	—	24,734
Bridges and Structural Steel	—	—	95,171	7,955	—	2,388	—	3,540	25,723	—	—	134,777
Hardware and Tools	—	—	22	8,560	—	1,742	349	2,594	148	—	—	13,415
Heating and Cooking Apparatus	3,570	—	30	92	—	7,138	369	372	19	—	—	11,590
Machinery	10,092	—	12,088	5,585	—	2,223	626	1,215	3,595	—	—	35,424
Iron Castings and Pipe Mills	33,705	—	7	9,501	—	28	—	—	202	—	51,157	94,600
Sheet Metal Products	—	—	1,115	535	—	26,728	10,519	1,122	2,793	—	—	42,812
Wire and Wire Products	—	—	—	380	88,066	8	—	84	1,384	—	—	89,922
Miscellaneous Iron and Steel Products	173	—	1,380	3,077	—	1,732	69	127	1,081	—	—	7,639
	62,691	—	109,998	38,668	88,066	46,338	12,391	9,069	38,816	—	51,157	457,194
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	—	—	—	53	—	187	—	—	310	—	—	550
Railway Rolling Stock	1,164	—	13,677	18,059	—	2,302	6,749	913	22,260	—	—	65,124
Shipbuilding	—	—	10,934	3,536	—	525	392	282	28,424	—	—	44,093
	1,164	—	24,611	21,648	—	3,014	7,141	1,195	50,994	—	—	109,767
Other Industries:												
Electrical Apparatus and Supplies	73	—	459	3,729	—	19,324	—	4,693	—	—	—	28,278
Non-Ferrous Metal Products	2,735	—	—	88	—	376	—	—	—	35	—	3,234
Railway Transport	—	28,312	—	—	—	—	—	—	—	—	—	28,312
Electric Railways	—	13	—	—	—	—	—	—	—	—	—	13
	2,808	28,325	459	3,817	—	19,700	—	4,693	—	35	—	59,837
Total	66,663	28,325	135,068	64,133	88,066	69,052	19,532	14,957	89,810	35	51,157	626,798

Consumption of Primary Iron and Steel Products by Industry and by Product—1953

(tons of 2000 lbs.)

Ontario

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	12,601	—	21,241	69,073	—	27,756	7,733	4,746	5,120	—	—	148,270
Boilers and Plate Work	9,810	—	12,600	3,946	—	10,371	113	50	69,099	—	—	105,989
Bridges and Structural Steel	1,133	—	137,829	12,571	—	2,919	276	298	23,949	—	—	178,975
Hardware and Tools	1,581	—	1,686	29,740	—	11,217	25	5,700	2,477	—	—	52,426
Heating and Cooking Apparatus	6,396	—	193	441	—	32,890	1,410	1,300	335	—	—	42,965
Machinery	9,421	—	12,865	15,540	—	14,073	1,633	340	8,613	—	—	62,485
Iron Castings and Pipe Mills	166,316	—	629	2,170	—	5,038	131	1,528	717	—	212,385	388,914
Sheet Metal Products	—	—	10,311	19,672	—	96,613	35,807	8,389	5,483	—	—	176,275
Wire and Wire Products	—	—	—	3,225	140,028	1,812	—	5,480	295	—	—	150,840
Miscellaneous Iron and Steel Products	14,645	—	3,461	60,773	—	4,390	55	721	2,277	—	—	86,322
	221,903	—	200,815	217,151	140,028	207,079	47,183	28,552	118,365	—	212,385	1,393,461
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	31,880	—	11,831	51,061	—	44,449	1,373	27,108	4,769	—	—	172,471
Railway Rolling Stock	6,103	—	8,783	5,940	—	10,611	1,496	57	11,030	—	—	44,020
Shipbuilding	275	—	5,451	880	—	470	61	—	21,694	—	—	28,831
	38,258	—	26,065	57,881	—	55,530	2,930	27,165	37,493	—	—	245,322
Other Industries:												
Electrical Apparatus and Supplies	6,109	—	7,579	11,381	—	91,484	—	5,142	—	—	—	121,695
Non-Ferrous Metal Products	13	—	—	848	—	119	—	—	—	907	—	1,887
Railway Transport	—	85,758	—	—	—	—	—	—	—	—	—	85,758
Electric Railways	—	1,732	—	—	—	—	—	—	—	—	—	1,732
	6,122	87,490	7,579	12,229	—	91,603	—	5,142	—	907	—	211,072
Total	266,283	87,490	234,459	287,261	140,028	354,212	60,113	60,859	155,858	907	212,385	1,849,855

Consumption of Primary Iron and Steel Products by Industry and by Product—1953

(tons of 2000 lbs.)

Manitoba

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	10	—	2,495	2,689	—	354	46	36	52	—	—	5,682
Boilers and Plate Work	—	—	1,120	—	—	1,575	—	—	866	—	—	3,561
Bridges and Structural Steel	199	—	13,137	11,016	—	764	—	—	6,565	—	—	31,681
Hardware and Tools	—	—	—	22	—	9	—	—	94	—	—	125
Heating and Cooking Apparatus	268	—	—	—	—	925	164	—	50	—	—	1,407
Machinery	716	—	280	247	—	1,040	30	2	302	—	—	2,617
Iron Castings and Pipe Mills	3,857	—	—	—	—	1	68	—	—	—	—	3,926
Sheet Metal Products	—	—	231	319	—	8,308	7,442	4	1,016	—	—	17,320
Wire and Wire Products	—	—	—	—	16	7	—	2	—	—	—	25
Miscellaneous Iron and Steel Products	520	—	494	12,510	—	187	2	—	974	—	—	14,687
	5,570	—	17,757	26,803	16	13,170	7,752	44	9,919	—	—	81,031
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	—	—	72	74	—	144	3	—	25	—	—	318
Railway Rolling Stock	551	—	746	4,507	—	181	491	—	1,253	—	—	7,729
	551	—	818	4,581	—	325	494	—	1,278	—	—	8,047
Other Industries:												
Electrical Apparatus and Supplies	—	—	125	57	—	2,475	—	201	—	—	—	2,858
Non-Ferrous Metal Products	—	—	—	3	—	—	—	—	—	—	—	3
Railway Transport	—	33,273	—	—	—	—	—	—	—	—	—	33,273
	—	33,273	125	60	—	2,475	—	201	—	—	—	36,134
Total	6,121	33,273	18,700	31,444	16	15,970	8,246	245	11,197	—	—	125,212

Consumption of Primary Iron and Steel Products by Industry and by Product—1953

(tons of 2000 lbs.)

Saskatchewan

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Agricultural Implements	—	—	92	179	—	219	41	23	16	—	—	570
Boilers and Plate Work	—	—	270	—	—	7,570	—	—	775	—	—	8,615
Heating and Cooking Apparatus	—	—	—	—	—	2	1	—	—	—	—	3
Machinery	30	—	100	267	—	89	1,223	—	374	—	—	2,083
Iron Castings and Pipe Mills	—	—	50	670	—	220	—	—	230	—	—	1,170
Sheet Metal Products	—	—	—	202	—	4,106	5,590	—	400	—	—	10,298
Motor Vehicle Parts and Accessories	—	—	—	354	—	1	—	—	—	—	—	355
Railway Transport	—	9,721	—	—	—	—	—	—	—	—	—	9,721
Total	30	9,721	512	1,672	—	12,207	6,855	23	1,795	—	—	32,815

Alberta

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	95	—	634	822	—	402	—	125	433	—	—	2,511
Boilers and Plate Work	—	—	138	294	—	24	—	—	2,188	—	—	2,644
Bridges and Structural Steel	—	—	9,495	10,086	—	577	—	750	2,407	—	—	23,315
Hardware and Tools	—	—	—	46	—	—	—	—	—	—	—	46
Heating and Cooking Apparatus	—	—	—	1	—	498	97	—	1	—	—	597
Machinery	32	—	342	898	—	98	—	7	492	—	—	1,869
Iron Castings and Pipe Mills	194	—	995	188	—	91	5	—	159	—	—	1,632
Sheet Metal Products	—	—	134	243	—	3,132	8,148	74	895	—	—	12,626
Miscellaneous Iron and Steel Products	—	—	3,708	6,861	—	206	—	33	278	—	—	11,086
	321	—	15,446	19,439	—	5,028	8,250	989	6,853	—	—	56,326
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	—	—	684	337	—	485	3	89	895	—	—	2,493
Railway Rolling Stock	150	—	162	899	—	69	32	244	1,014	—	—	2,570
	150	—	846	1,236	—	554	35	333	1,909	—	—	5,063
Other Industries:												
Electrical Apparatus and Supplies	—	—	—	10	—	27	—	—	—	—	—	37
Railway Transport	—	11,194	—	—	—	—	—	—	—	—	—	11,194
	—	11,194	—	10	—	27	—	—	—	—	—	11,231
Total	471	11,194	16,292	20,685	—	5,609	8,285	1,322	8,762	—	—	72,620

Consumption of Primary Iron and Steel Products by Industry and by Product—1953

(tons of 2000 lbs.)

British Columbia

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	—	—	59	100	—	4	5	—	1	—	—	169
Boilers and Plate Work	—	—	809	677	—	674	10	38	4,714	—	—	6,922
Bridges and Structural Steel	—	—	21,673	9,282	—	1,606	—	—	24,282	—	—	56,843
Hardware and Tools	—	—	—	5,088	—	115	2	250	112	—	—	5,567
Heating and Cooking Apparatus	796	—	29	41	—	850	8	38	120	—	—	1,882
Machinery	200	—	2,270	1,355	—	298	94	16	1,822	—	—	6,055
Iron Castings and Pipe Mills	200	—	107	92	—	18	2	—	275	—	—	694
Sheet Metal Products	—	—	112	306	—	2,712	3,230	15	339	—	—	6,714
Wire and Wire Products	—	—	—	109	8,207	153	—	—	—	—	—	8,469
Miscellaneous Iron and Steel Products	—	—	1,021	2,902	—	223	—	9	734	—	—	4,889
	1,196	—	26,080	19,952	8,207	6,653	3,351	366	32,399	—	—	98,204
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	—	—	488	132	—	337	1	10	306	—	—	1,274
Railway Rolling Stock	—	—	7	113	—	6	11	—	17	—	—	154
Shipbuilding	30	—	1,818	955	—	462	169	—	5,621	—	—	9,055
	30	—	2,313	1,200	—	805	181	10	5,944	—	—	10,483
Other Industries:												
Electrical Apparatus and Supplies	—	—	4	45	—	1,175	—	35	—	—	—	1,259
Non-Ferrous Metal Products	—	—	—	121	—	139	—	—	—	—	—	260
Railway Transport	—	19,990	—	—	—	—	—	—	—	—	—	19,990
Electric Railways	—	1,164	—	—	—	—	—	—	—	—	—	1,164
	—	21,154	4	166	—	1,314	—	35	—	—	—	22,673
Total	1,226	21,154	28,397	21,318	8,207	8,772	3,532	411	38,343	—	—	131,360

Consumption of Primary Iron and Steel Products by Industry and by Product—1954

(tons of 2000 lbs.)

Canada Total

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Terne- and Tinplate	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):													
Agricultural Implements	7,841	—	17,158	65,044	—	23,213	1	4,437	3,292	4,642	—	—	125,628
Boilers and Plate Work	19,587	—	9,309	5,572	—	28,471	—	234	159	74,438	—	—	137,770
Bridges and Structural Steel	711	—	292,797	62,629	—	8,928	384	241	1,779	86,172	—	—	453,641
Hardware and Tools	1,695	—	1,295	30,302	—	11,988	19	705	6,952	2,257	—	—	55,213
Heating and Cooking Apparatus	9,045	—	1,029	498	—	47,897	84	3,208	1,021	2,145	—	—	64,927
Machinery	18,904	—	27,988	28,533	—	15,125	344	3,809	1,366	15,396	—	—	111,465
Iron Castings and Pipe Mills	160,876	—	1,784	11,191	—	2,309	16	223	2,552	1,773	—	232,170	412,894
Sheet Metal Products	—	—	10,526	14,159	—	125,698	252,372	72,021	8,152	10,982	—	—	493,910
Wire and Wire Products	—	—	—	8,640	271,425	4,021	—	—	2,600	1,662	—	—	288,348
Miscellaneous Iron and Steel Products	11,853	—	16,052	102,909	—	11,428	27	866	1,996	5,714	—	—	150,845
	230,512	—	377,938	329,477	271,425	279,078	253,247	85,744	29,869	205,181	—	232,170	2,294,641
Transportation Equipment Group:													
Motor Vehicles	3,010	—	—	3,172	—	14,998	—	150	679	—	21,001	—	43,010
Motor Vehicle Parts and Accessories	20,457	—	4,507	39,012	—	25,013	1,961	1,546	18,332	5,993	—	—	116,821
Railway Rolling Stock	4,679	—	36,072	28,231	—	12,313	—	4,825	1,255	49,000	—	—	136,375
Shipbuilding	655	—	20,058	6,679	—	3,108	—	721	339	40,571	—	—	72,131
	28,801	—	60,637	77,094	—	55,432	1,961	7,242	20,605	95,564	21,001	—	368,337
Other Industries:													
Electrical Apparatus and Supplies	3,612	—	7,557	14,268	—	89,395	—	—	8,194	—	—	—	123,026
Non-Ferrous Metal Products	4,353	—	—	453	—	548	—	—	—	—	804	—	6,158
Railway Transport	—	291,304	—	—	—	—	—	—	—	—	—	—	291,304
Electric Railways	—	1,615	—	—	—	—	—	—	—	—	—	—	1,615
	7,965	292,919	7,557	14,721	—	89,943	—	—	8,194	—	804	—	422,103
Total	267,278	292,919	446,132	421,292	271,425	424,453	255,208	92,986	58,668	300,745	21,805	232,170	3,085,081

Consumption of Primary Iron and Steel Products by Industry and by Product—1954

(tons of 2000 lbs.)

Newfoundland

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Machinery	—	—	14	176	—	107	2	—	224	—	—	523
Wire and Wire Products	—	—	—	100	1,400	175	—	5	—	—	—	1,680
Railway Transport	—	1,686	—	—	—	—	—	—	—	—	—	1,686
Total	—	1,686	14	276	1,400	282	2	5	224	—	—	3,889

Prince Edward Island

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Agricultural Implements	—	—	—	1	—	—	—	—	—	—	—	1
Shipbuilding	10	—	7	18	—	5	—	—	25	—	—	65
Total	10	—	7	19	—	5	—	—	25	—	—	66

New Brunswick

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Heating and Cooking Apparatus	1,481	—	—	26	—	5,429	85	—	—	—	—	7,021
Machinery	—	—	252	32	—	19	—	—	330	—	—	633
Iron Castings and Pipe Mills	7	—	113	52	—	9	1	—	16	—	—	198
Sheet Metal Products	—	—	9	—	—	—	30	5	9	—	—	53
Wire and Wire Products	—	—	—	—	5,283	—	—	—	—	—	—	5,283
Miscellaneous Iron and Steel Products	—	—	—	40	—	—	—	—	—	—	—	40
Motor Vehicle Parts and Accessories	—	—	25	6	—	15	9	17	5	—	—	77
Shipbuilding	163	—	1,296	394	—	39	30	—	429	—	—	2,351
Non-Ferrous Metal Products	1,491	—	—	57	—	—	—	—	—	—	—	1,548
Railway Transport	—	9,666	—	—	—	—	—	—	—	—	—	9,666
Total	3,142	9,666	1,695	607	5,283	5,511	155	22	789	—	—	26,870

Consumption of Primary Iron and Steel Products by Industry and by Product—1954

(tons of 2000 lbs.)

Nova Scotia

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Bridges and Structural Steel	30	—	5,065	80	—	17	—	—	1,773	—	—	6,965
Hardware and Tools	—	—	—	928	—	—	—	—	—	—	—	928
Heating and Cooking Apparatus	59	—	—	6	—	848	421	—	—	—	—	1,334
Machinery	136	—	—	31	—	41	10	254	10	—	—	482
Iron Castings and Pipe Mills	321	—	157	30	—	23	5	—	503	—	—	1,039
Sheet Metal Products	—	—	—	—	—	—	132	—	—	—	—	132
Wire and Wire Products	—	—	—	—	26,364	—	—	—	—	—	—	26,364
Miscellaneous Iron and Steel Products	—	—	3,746	23,435	—	2	681	—	1,405	—	—	29,269
	546	—	8,968	24,510	26,364	931	1,249	254	3,691	—	—	66,513
Transportation Equipment Group:												
Railway Rolling Stock	243	—	3,701	8,954	—	—	—	—	10,097	—	—	22,995
Shipbuilding	170	—	562	1,130	—	1,020	194	—	2,297	—	—	5,373
	413	—	4,263	10,084	—	1,020	194	—	12,394	—	—	28,368
Other Industries:												
Electrical Apparatus and Supplies	—	—	5	1	—	10	—	—	—	—	—	16
Railway Transport	—	10,476	—	—	—	—	—	—	—	—	—	10,476
	—	10,476	5	1	—	10	—	—	—	—	—	10,492
Total	959	10,476	13,236	34,595	26,364	1,961	1,443	254	16,085	—	—	105,373

Consumption of Primary Iron and Steel Products by Industry and by Product—1954

(tons of 2000 lbs.)

Quebec

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	79	—	—	810	—	328	108	—	3	—	—	1,328
Boilers and Plate Work	13,511	—	187	1,342	—	5,662	135	2	4,210	—	—	25,049
Bridges and Structural Steel	—	—	94,220	10,724	—	3,143	—	1,137	20,618	—	—	129,842
Hardware and Tools	—	—	180	2,255	—	2,721	636	2,028	112	—	—	7,932
Heating and Cooking Apparatus	2,344	—	30	86	—	5,503	248	352	863	—	—	9,426
Machinery	9,414	—	11,506	5,989	—	2,106	575	758	3,353	—	—	33,701
Iron Castings and Pipe Mills	32,923	—	9	8,877	—	12	—	—	151	—	48,457	90,429
Sheet Metal Products	—	—	502	1,202	—	28,650	8,680	1,091	2,435	—	—	42,560
Wire and Wire Products	—	—	—	6,990	90,780	301	—	123	1,306	—	—	99,500
Miscellaneous Iron and Steel Products	40	—	2,993	12,331	—	2,302	3	38	814	—	—	18,521
	58,311	—	109,627	50,606	90,780	50,728	10,385	5,529	33,865	—	48,457	458,288
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	—	—	107	571	—	128	14	1,533	—	—	—	2,353
Railway Rolling Stock	1,036	—	16,802	13,153	—	5,608	4,407	910	21,587	—	—	63,503
Shipbuilding	75	—	12,622	3,469	—	1,128	338	339	18,248	—	—	36,219
	1,111	—	29,531	17,193	—	6,864	4,759	2,782	39,835	—	—	102,075
Other Industries:												
Electrical Apparatus and Supplies	—	—	523	3,503	—	22,439	—	2,324	—	—	—	28,789
Non-Ferrous Metal Products	2,849	—	—	175	—	91	—	—	—	—	—	3,115
Railway Transport	—	36,093	—	—	—	—	—	—	—	—	—	36,093
Electric Railways	—	21	—	—	—	—	—	—	—	—	—	21
	2,849	36,114	523	3,678	—	22,530	—	2,324	—	—	—	68,018
Total	62,271	36,114	139,681	71,477	90,780	80,122	15,144	10,635	73,700	—	48,457	628,381

Consumption of Primary Iron and Steel Products by Industry and by Product—1954

(tons of 2000 lbs.)

Ontario

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	7,707	—	13,014	60,251	—	21,951	4,236	3,251	3,929	—	—	114,339
Boilers and Plate Work	6,076	—	6,937	3,300	—	18,863	64	92	58,620	—	—	93,952
Bridges and Structural Steel	681	—	141,823	11,424	—	2,593	99	150	23,846	—	—	180,616
Hardware and Tools	1,695	—	1,115	22,407	—	9,193	69	4,691	1,690	—	—	40,860
Heating and Cooking Apparatus	4,371	—	261	334	—	32,913	1,615	588	1,085	—	—	41,167
Machinery	8,563	—	13,769	19,576	—	11,446	1,573	336	9,411	—	—	64,674
Iron Castings and Pipe Mills	122,628	—	250	1,839	—	2,052	184	2,552	588	—	183,713	313,806
Sheet Metal Products	—	—	9,258	11,608	—	79,694	38,141	7,027	6,215	—	—	151,943
Wire and Wire Products	—	—	—	1,480	140,210	3,398	—	2,470	356	—	—	147,914
Miscellaneous Iron and Steel Products	11,309	—	3,965	44,370	—	8,577	181	1,893	2,100	—	—	72,395
	163,030	—	190,392	176,589	140,210	190,680	46,162	23,050	107,840	—	183,713	1,221,666
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	20,452	—	3,600	37,881	—	24,207	1,514	16,669	4,697	—	—	109,020
Railway Rolling Stock	3,017	—	14,665	3,928	—	6,525	51	90	15,655	—	—	43,931
Shipbuilding	229	—	3,559	841	—	460	79	—	11,991	—	—	17,159
	23,698	—	21,824	42,650	—	31,192	1,644	16,759	32,343	—	—	170,110
Other Industries:												
Electrical Apparatus and Supplies	3,612	—	6,904	10,533	—	63,073	—	5,400	—	—	—	89,522
Non-Ferrous Metal Products	13	—	—	190	—	160	—	—	—	804	—	1,167
Railway Transport	—	86,382	—	—	—	—	—	—	—	—	—	86,382
Electric Railways	—	602	—	—	—	—	—	—	—	—	—	602
	3,625	86,984	6,904	10,723	—	63,233	—	5,400	—	804	—	177,673
Total	190,353	86,984	219,120	229,962	140,210	285,105	47,806	45,209	140,183	804	183,713	1,569,449

Consumption of Primary Iron and Steel Products by Industry and by Product—1954

(tons of 2000 lbs.)

Manitoba

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	9	—	3,585	3,057	—	511	72	9	208	—	—	7,451
Boilers and Plate Work	—	—	498	12	—	2,657	31	—	1,091	—	—	4,289
Bridges and Structural Steel	—	—	18,657	20,516	—	698	—	34	7,068	—	—	46,973
Hardware and Tools	—	—	—	23	—	9	—	—	97	—	—	129
Heating and Cooking Apparatus	2	—	1	—	—	1,112	123	—	54	—	—	1,292
Machinery	413	—	176	246	—	859	13	8	53	—	—	1,768
Iron Castings and Pipe Mills	4,356	—	—	—	—	—	27	—	—	—	—	4,383
Sheet Metal Products	—	—	222	716	—	9,718	9,449	17	1,350	—	—	21,472
Wire and Wire Products	—	—	—	—	16	7	—	2	—	—	—	25
Miscellaneous Iron and Steel Products	504	—	452	11,840	—	144	1	—	913	—	—	13,854
	5,284	—	23,591	36,410	16	15,715	9,716	70	10,834	—	—	101,636
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	5	—	84	71	—	143	4	23	65	—	—	395
Railway Rolling Stock	287	—	810	1,783	—	155	353	—	1,225	—	—	4,613
	292	—	894	1,854	—	298	357	23	1,290	—	—	5,008
Other Industries:												
Electrical Apparatus and Supplies	—	—	125	80	—	2,667	—	125	—	—	—	2,997
Non-Ferrous Metal Products	—	—	—	2	—	—	—	—	—	—	—	2
Railway Transport	—	19,550	—	—	—	—	—	—	—	—	—	19,550
	—	19,550	125	82	—	2,667	—	125	—	—	—	22,549
Total	5,576	19,550	24,610	38,346	16	18,680	10,073	218	12,124	—	—	129,193

Consumption of Primary Iron and Steel Products by Industry and by Product—1954

(tons of 2000 lbs.)

Saskatchewan

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Agricultural Implements	—	—	119	94	—	79	20	27	25	—	—	364
Boilers and Plate Work	—	—	620	20	—	300	—	—	651	—	—	1,591
Machinery	5	—	120	269	—	63	1,440	—	365	—	—	2,262
Iron Castings and Pipe Mills	—	—	264	133	—	115	—	—	181	—	—	693
Sheet Metal Products	—	—	150	302	—	2,064	4,802	—	396	—	—	7,714
Motor Vehicle Parts and Accessories	—	—	—	13	—	2	—	—	—	—	—	15
Electrical Apparatus and Supplies	—	—	—	70	—	—	—	—	—	—	—	70
Railway Transport	—	7,289	—	—	—	—	—	—	—	—	—	7,289
Total	5	7,289	1,273	901	—	2,623	6,262	27	1,618	—	—	19,998

Alberta

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	46	—	418	811	—	304	1	—	466	—	—	2,046
Boilers and Plate Work	—	—	209	102	—	346	1	—	3,257	—	—	3,915
Bridges and Structural Steel	—	—	12,435	10,477	—	621	—	458	3,085	—	—	27,076
Hardware and Tools	—	—	—	18	—	—	—	—	—	—	—	18
Heating and Cooking Apparatus	—	—	1	1	—	699	193	1	—	—	—	895
Machinery	21	—	562	835	—	133	—	8	392	—	—	1,951
Iron Castings and Pipe Mills	373	—	860	165	—	82	5	—	145	—	—	1,630
Sheet Metal Products	—	—	221	147	—	2,645	7,914	—	—	—	—	10,927
Miscellaneous Iron and Steel Products	—	—	4,386	7,641	—	224	—	39	322	—	—	12,612
	440	—	19,092	20,197	—	5,054	8,114	506	7,667	—	—	61,070
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	—	—	366	290	—	390	3	79	788	—	—	1,916
Railway Rolling Stock	96	—	90	368	—	22	8	255	429	—	—	1,268
	96	—	456	658	—	412	11	334	1,217	—	—	3,184
Other Industries:												
Electrical Apparatus and Supplies	—	—	—	11	—	72	—	—	—	—	—	83
Railway Transport	—	26,820	—	—	—	—	—	—	—	—	—	26,820
	—	26,820	—	11	—	72	—	—	—	—	—	26,903
Total	536	26,820	19,548	20,866	—	5,538	8,125	840	8,884	—	—	91,157

Consumption of Primary Iron and Steel Products by Industry and by Product—1954

(tons of 2000 lbs.)

British Columbia

	Pig Iron	Rails, etc.	Structurals	Bars and Rods	Wire Rods	Plain Sheets	Galvanized	Strip	Plate	Other Flat Rolled	Skelp	Total
Iron and Steel Products Group (Except Primary Iron and Steel):												
Agricultural Implements	—	—	22	20	—	40	—	5	11	—	—	98
Boilers and Plate Work	—	—	858	796	—	643	3	65	6,609	—	—	8,974
Bridges and Structural Steel	—	—	20,597	9,408	—	1,856	142	—	29,782	—	—	61,785
Hardware and Tools	—	—	—	4,671	—	65	—	233	358	—	—	5,327
Heating and Cooking Apparatus	788	—	736	45	—	1,393	523	80	143	—	—	3,708
Machinery	352	—	1,589	1,379	—	351	196	2	1,258	—	—	5,127
Iron Castings and Pipe Mills	268	—	131	95	—	16	1	—	189	—	—	700
Sheet Metal Products	—	—	164	184	—	2,927	2,873	12	577	—	—	6,737
Wire and Wire Products	—	—	—	70	7,372	140	—	—	—	—	—	7,582
Miscellaneous Iron and Steel Products	—	—	510	3,252	—	179	—	26	160	—	—	4,127
	1,408	—	24,607	19,920	7,372	7,610	3,738	423	39,087	—	—	104,165
Transportation Equipment Group:												
Motor Vehicle Parts and Accessories	—	—	325	180	—	128	2	11	438	—	—	1,084
Railway Rolling Stock	—	—	4	45	—	3	6	—	7	—	—	65
Shipbuilding	8	—	2,012	827	—	456	80	—	7,581	—	—	10,964
	8	—	2,341	1,052	—	587	88	11	8,026	—	—	12,113
Other Industries:												
Electrical Apparatus and Supplies	—	—	—	70	—	1,134	—	345	—	—	—	1,549
Non-Ferrous Metal Products	—	—	—	29	—	297	—	—	—	—	—	326
Railway Transport	—	19,775	—	—	—	—	—	—	—	—	—	19,775
Electric Railways	—	992	—	—	—	—	—	—	—	—	—	992
	—	20,767	—	99	—	1,431	—	345	—	—	—	22,642
Total	1,416	20,767	26,948	21,071	7,372	9,628	3,826	779	47,113	—	—	138,920

FREIGHT CHARGES ON BASIC STEEL PRODUCTS

The rates shown in the following tables cover rail, truck, and water transportation. No distinction is made between rail and truck rates, although water rates and combination water-and-rail rates are indicated.

The rates shown are those which were in force on March 1, 1956. On March 7, 1956, single-factor rates from United States points of origin were increased by 6 per cent. This meant that all rates from shipping points west of Chicago and north of Washington, D.C., to destinations in Ontario, Quebec, and the Maritime Provinces, were increased by 6 per cent. Rates from United States shipping points into Vancouver were also increased by 6 per cent. Shipments into Manitoba, Saskatchewan, and Alberta were increased by something less than 6 per cent, depending upon distance from the border. In other words, the increase applied only to that part of the journey within the United States.

In May, 1956, Canadian railways applied to the Board of Transport Commissioners for a 15 per cent "across-the-board" increase in rates. The outcome was pending at time of writing this Report.

The ocean shipping rates shown in the tables may no longer apply since they are subject to considerable variation. They do give an indication, however, of the relationship between transportation costs to given points.

73371—20

Freight Charges to Chief Canadian Steel Markets, March 1, 1956

(cents per 100 lbs.)

PIG IRON

Destination	Points of Shipment								
	Sault Ste. Marie	Hamilton	Buffalo	Chicago	Duluth	Geneva Utah	Pueblo Col.	U.K. Ports	European Ports
Saint John	72·4	54·0	—	—	—	—	—	75·8[1]	56·9[1]
Montreal	28·6–S	17·8–S	30·0–S	—	—	—	—	85·8[1]	66·9[1]
	49·6	31·1	47·7	—	—	—	—	—	—
Three Rivers	31·1–S	20·8–S	59·2	—	—	—	—	80·0[1]	61·1[1]
	61·0	42·4	—	—	—	—	—	—	—
Toronto	20·8–S	13·3	30·0	—	—	—	—	107·8	102·1
	35·4	—	—	—	—	—	—	—	—
Windsor	34·0–S	14·6–S	26·9–S	50·7	—	—	—	115·6	108·8
	40·7	25·7	39·7	—	—	—	—	—	—
London	37·0–S	17·7	30·8	—	—	—	—	—	—
	43·4	—	—	—	—	—	—	—	—
Oshawa	35·3–S	16·0	26·9–S	—	—	—	—	—	—
	39·8	—	30·8	—	—	—	—	—	—
St. Catharines	25·5–S	13·3	12·3	—	—	—	—	—	—
	43·4	—	—	—	—	—	—	—	—
Winnipeg	69·5	87·4	—	67·1	39·0	—	—	189·6[2]	170·8[2]
Calgary	150·0	160·3	—	135·0	123·1	144·1	102·5	157·1[3]	154·7[3]
Vancouver	97·3	—	—	94·0	82·1	61·5	61·5	77·1[1]	74·7[1]

[1] Includes all charges to customer's plant. [2] via Churchill [3] via Vancouver S–Summer rate.

Freight Charges to Chief Canadian Steel Markets, March 1, 1956

(cents per 100 lbs.)

BILLETS, BLOOMS, SLABS

Destination	Points of Shipment						
	Sault Ste. Marie	Hamilton	Sydney, N.S.	Buffalo, N.Y.	Pittsburgh, Pa.	U.K. Ports	European Ports
Trenton, N.S.	87·5	—	8·9	103·9	114·1	—	—
Amherst, N.S.	87·5	—	15·0	—	—	—	—
Montreal	30·0-S	15·6-S	38·0	61·7	75·6	81·3	92·4
	49·6	27·4	—	—	—	—	—
Windsor	47·3	27·4	—	42·3	—	110·3	115·7
Galt	43·4	14·2	—	41·0	—	—	—
St. Catharines	26·8-S	14·2	—	24·7	—	120·8	126·2
	33·9	—	—	—	—	—	—
Welland	23·4	7·0	—	11·0	—	110·3	115·7

S—Summer rate

Freight Charges to Chief Canadian Steel Markets, March 1, 1956

(cents per 100 lbs.)

BARS

Destination	Sydney, N.S.	Montreal	Hamilton	Sault Ste. Marie	Buffalo	Detroit	Chicago	Geneva Utah	Seattle	U.K. Ports	European Ports
	Points of Shipment										
Halifax	26	63	100(1-100)-S	—	130(1-40)	—	—	—	—	69	62
			108(1-60)	—	—	—	—	—	—	—	—
			114(1-36)	—	—	—	—	—	—	—	—
New Glasgow	14	66	114	128	130	—	—	—	—	117	111
Montreal	59	—	35(1-100)-B	61-B	76(1-100)-S	—	—	—	—	69	62
	—	—	37(1-100)-S	66	82(1-23)	—	—	—	—	—	—
	—	—	45(1-60)	—	—	—	—	—	—	—	—
Oshawa	—	60	21	55	51	62	95	—	—	—	—
	—	—	—	—	55(1-32)	—	—	—	—	—	—
Toronto	—	35-B	13	50-B	43(1-40)	59	91	—	—	122	121
	—	60	—	55	—	—	—	—	—	—	—
Hamilton	—	55·5-B	—	43-S	41	54	90	—	—	122	121
	—	60	—	50-B	46	—	—	—	—	—	—
	—	—		55	—	—	—	—	—	—	—
London	—	79	22	65-S	51	45	83	—	—	—	—
	—	—	—	66	55(1-32)	—	—	—	—	—	—
St. Catharines	100	74	15	57	34	57	91	—	—	—	—
Welland	—	74	17	62	36	57	91	—	—	116	107
Windsor	121	78·5-S	29(1-30)	50-B	45·1(1-80)	14	—	—	—	—	—
	—	—	—	70	64(1-32)	17	—	—	—	—	—
Winnipeg	—	161[2]	158·5[2]	140[2]	—	—	142	217	—	263[3]	257[3]
	—	184	166-S	145-S	—	—	—	—	—	—	—
	—	—	191	—	—	—	—	—	—	—	—
Regina	—	—	212·5[2]	198	—	—	183	250	—	242[3]	236[3]
	—	—	220-S	—	—	—	—	—	—	—	—
	—	—	243	—	—	—	—	—	—	—	—
Calgary	—	227·5[2]	227·5(1-100)[2]	227·5[2]	—	—	212	169	150	211[4]	221[4]
	—	235	235(1-100)	235	—	—	—	—	—	—	—
Edmonton	—	237·5[2]	237·5(1-100)[2]	237·5[2]	—	—	241	194	160	221[4]	231[4]
	—	245	245(1-100)	245	—	—	—	—	—	—	—
Vancouver	—	110	110	110	—	—	152	94	25	90	100

[1] Minimum carload lot in thousands of pounds. [2] Water and rail (during navigation season). [3] via Churchill. [4] via Vancouver S-Summer rate.
B-Boat rate.

Freight Charges to Chief Canadian Steel Markets, March 1, 1956

(in cents per 100 lbs.)

WIRE RODS

Destination	Points of Shipment					
	Sydney, N.S.	Worcester, Mass.	Buffalo	Chicago	Los Angeles	San Francisco
St. John's, Nfld....	50·1	—	—	—	—	—
Saint John, N.B....	18·6	69·0	—	—	—	—
Montreal...........	38·0	55·8	61·7	88·1	—	—
Toronto............	51·3	—	35·2	56·4	—	—
Hamilton...........	54·0	—	29·9	52·9	—	—
Brantford..........	57·5	—	36·7	—	—	—
Niagara Falls......	58·4	—	24·7	52·9	—	—
Vancouver[1].........	—	—	—	107·5	72·9-B	67·4-B

[1] Water transport is available from Sydney to Vancouver if charter-vessel arranged. B—Boat rate.

Freight Charges to Chief Canadian Steel Markets, March 1, 1956

(cents per 100 lbs.)

RAILS

Destination	Points of Shipment						
	Sydney, N.S.	Sault Ste. Marie	Buffalo	Chicago	Pueblo, Col.	U.K. Ports	European Ports
Montreal.................	39·8	47·8	63·2	—	—	77·7	72·4
Toronto..................	54·0	54·8	36·7	—	—	—	—
Hamilton.................	57·5	54·8	35·2	—	—	120·1	118·9
Niagara Falls............	62·8	56·6	27·9	—	—	—	—
Welland..................	62·8	56·6	29·4	—	—	—	—
North Bay................	70·8	45·9	78·0	—	—	—	—
Vancouver................	111·6[1]	123·0	175·1	154·3	124·9	90·0	92·0

[1] via Panama.

Freight Charges to Chief Canadian Steel Markets, March 1, 1956

(cents per 100 lbs.)

STRUCTURALS

Destination	Points of Shipment										
	Hamilton	Sault Ste. Marie	Montreal	Buffalo	Chicago	Seattle	Geneva Utah	Pueblo Col.	Fontana Calif.	U.K. Ports	European Ports
New Glasgow	111	128	66	130	—	—	—	—	—	117	111
Quebec	64·5-S	88·5-B	27·5	97	—	—	—	—	—	79	73
	72·5	93·5	—	—	—	—	—	—	—	—	—
Montreal	35-B	61-B	—	83	—	—	—	—	—	79	73
	37-S	66	—	—	—	—	—	—	—	—	—
	45	—	—	—	—	—	—	—	—	—	—
Oshawa	21	55	44	51	95	—	—	—	—	—	—
	—	—	—	55	—	—	—	—	—	—	—
Toronto	13	50-B	62	43	91	—	—	—	—	122	121
	—	55	—	—	—	—	—	—	—	—	—
Hamilton	—	43-S	68	38	90	—	—	—	—	122	121
	—	55	—	—	—	—	—	—	—	—	—
St. Catharines	15	57	74	34	91	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—
Windsor	29	50-B	81	64	72	—	—	—	—	116	107
	—	70	78·5-S	67	—	—	—	—	—	—	—
Winnipeg	158·5[1]	140[1]	—	—	142	—	278	—	—	263[2]	257[2]
	191	149	—	—	—	—	—	—	—	—	—
Calgary	227·5[1]	201	—	—	212	150	169	193	186	211[3]	221[3]
	235	—	—	—	—	—	—	—	—	—	—
Edmonton	237·5[1]	226	—	—	241	160	194	222	211	221[3]	231[3]
	245	—	—	—	—	—	—	—	—	—	—
Vancouver	110	110	—	—	152	25	94	138	99	90	100

S–Summer rate. B–Boat rate. [1] Water and rail. [2] via Churchill. [3] via Vancouver.

Freight Charges to Chief Canadian Steel Markets, March 1, 1956

(cents per 100 lbs.)

PLATE

	Points of Shipment									
Destination	Hamilton	Sault St. Marie	Buffalo	Detroit	Chicago	Geneva, Utah	Claymont, Del.	Seattle	U.K. Ports	European Ports
New Glasgow	86(1–80)	113	130	—	—	—	—	—	117	111
Halifax	96(1–50)	—	—	—	—	—	125(1–40)	—	69	62
	114(1–30)	—	—	—	—	—	—	—	—	—
Saint John	86(1–80)	113	115	—	—	—	—	—	81	75
Quebec	64·5(1–60)–S	88·5–B	97	—	—	—	101(1–40)	—	69	62
	72·5(1–60)	—	—	—	—	—	—	—	—	—
	79(1–50)	—	—	—	—	—	—	—	—	—
	93(1–40)	—	—	—	—	—	—	—	—	—
Montreal	35(1–100)–B	61–B	76–S	—	—	—	91(1–40)	—	69	62
	37(1–100)–S	66	83	—	—	—	—	—	—	—
	45(1–60)	—	—	—	—	—	—	—	—	—
	55·5(1–24)–B	—	—	—	—	—	—	—	—	—
	60(1–30)	—	—	—	—	—	—	—	—	—
Toronto	13	50–B	43	59	—	—	—	—	122	121
		55	—	—	—	—	—	—	—	—
Welland	17	60–S	36	57	91	—	—	—	116	107
		62	39	—	—	—	—	—	—	—
Windsor	29	50–B	45·1	14(1–32)	48·1(1–51)	—	—	—	116	107
	27–B	70	—	—	—	—	—	—	—	—
Winnipeg	—	140[2]	—	—	142	—	—	—	247[3]	240[3]
	147(1–80)[2]	142	—	—	—	—	—	—	—	—
Regina	206(80)[2]	191	—	—	183	222	—	—	226[3]	219[3]
Calgary	222·5(1–120)[2]	222·5[2]	—	—	212	169	—	150	214[4]	204[4]
	230(1–120)	223	—	—	—	—	—	—	—	—
	227·5(1–100)[2]	—	—	—	—	—	—	—	—	—
	235(1–100)	—	—	—	—	—	—	—	—	—
	257(1–80)	—	—	—	—	—	—	—	—	—
Edmonton	222·5(1–120)[2]	223	—	—	241	192	—	160	224[4]	214[4]
	230(1–120)	—	—	—	—	—	—	—	—	—
	237·5(1–100)[2]	—	—	—	—	—	—	—	—	—
	245(1–100)	—	—	—	—	—	—	—	—	—
	257(1–80)	—	—	—	—	—	—	—	—	—
Vancouver	110	110	—	—	152	94	—	25	90[4]	100[4]

[1] Minimum carload lot in thousands of pounds. [2] Water and rail. [3] via Churchill. [4] via Vancouver. S–Summer rate. B–Boat rate.

Freight Charges to Chief Canadian Steel Markets, March 1, 1956

(cents per 100 lbs.)

SHEET

Destination	Points of Shipment												
	Hamilton	Sault Ste. Marie	Buffalo	Detroit	Cleveland	Pittsburgh, Pa.	Fontana, Calif.	Geneva, Utah	Sparrows Pt., Md.	Chicago	Pittsburgh, Calif.	U.K. Ports	European Ports
Halifax	96(1–50)	—	—	—	—	—	—	—	131(1–40)	—	—	55	62
	114(1–30)	—	—	—	—	—	—	—	—	—	—	—	—
Quebec	64.5(1–60)–S	—	—	—	—	110(1–40)	—	—	108(1–40)	—	—	55	62
	72·5(1–60)	—	—	—	—	—	—	—	—	—	—	—	—
	79(1–50)	—	—	—	—	—	—	—	—	—	—	—	—
	93(1–40)	—	—	—	—	—	—	—	—	—	—	—	—
Montreal	35(1–60)–B	61–B	76(1–60)–S	—	—	100(1–40)	—	—	99(1–40)	—	—	55	62
	37(1–60)–S	66	83(1–23)	—	—	—	—	—	—	—	—	—	—
	45(1–60)	—	—	—	—	—	—	—	—	—	—	—	—
Oshawa	21	55	51	—	77	81	—	—	—	—	—	—	—
Toronto	13	50–B	43	67	72	—	—	—	—	—	—	122	—
	—	55	—	—	—	—	—	—	—	—	—	—	—
St. Catharines	15	57	34(1–32)	62	66	70	—	—	—	—	—	138	—
Windsor	29	50–B	45·1(1–80)	14	—	—	—	—	—	72	—	116	—
	27–B	70	64(1–32)	—	—	—	—	—	—	—	—	—	—
Winnipeg	147[2]	142	—	—	—	—	—	192	—	142	—	233[3]	—
Calgary	222·5(1–120)[2]	222·5[2]	—	—	—	—	—	163	—	212	210	214[4]	—
	230(1–120)	230	—	—	—	—	—	—	—	—	—	—	—
	257(1–80)	—	—	—	—	—	—	—	—	—	—	—	—
Edmonton	222·5(1–120)[2]	222·5[2]	—	—	—	—	234	192	—	241	222	224[4]	—
	230(1–120)	230	—	—	—	—	—	—	—	—	—	—	—
	257(1–80)	—	—	—	—	—	—	—	—	—	—	—	—
Vancouver	110(1–100)	110	—	—	—	—	99	94	—	170	87	81	88
	204(1–80)[2]	—	—	—	—	—	—	—	—	—	—	—	—
	235(1–60)[2]	—	—	—	—	—	—	—	—	—	—	—	—
	242(1–60)	—	—	—	—	—	—	—	—	—	—	—	—

[1] Minimum carload lot in thousands of pounds. [2] Boat and rail. [3] via Churchill. [4] via Vancouver. S–Summer rail rate. B–Boat rate.

Freight Charges to Chief Canadian Steel Markets, March 1, 1956

(cents per 100 lbs.)

SKELP

Destination	Points of Shipment								
	Hamilton	Sault Ste. Marie	Buffalo	Chicago	Lorain, Ohio	Geneva, Utah	Youngstown, Ohio	U.K. Ports	European Ports
Montreal	15·6–S	30·0–S	61·7	—	82·8	—	—	58·3	57·7
	27·4	49·6	—	—	20·6–B	—	—	—	—
Welland	7·0	23·4	11·0	—	—	—	29·6–S	102·5	106·6
Regina	170·0	161·5	—	173·0	—	208·0	—	185·4[1]	190·4[1]
Port Moody, B.C.	95·0	95·0	—	128·8	—	—	92·0	96·6	100·5

[1] via Churchill. S–Summer rate. B–Boat rate.

Freight Charges to Chief Canadian Steel Markets, March 1, 1956

(cents per 100 lbs.)

TINPLATE

Destination	Points of Shipment				
	Hamilton	Warren, Ohio	Fairless, Pa.	Youngstown, Ohio	Sparrows Pt., Md.
Port Elgin, N.B.	82	—	—	—	125
Black's Harbour, N.B.	79	—	—	—	114
Montreal	35-B	97	—	—	—
	37(1–70)	—	—	—	—
Toronto	13(1–140)	72	—	—	—
Hamilton	4	70	—	—	—
Simcoe	12	70	—	70	—
Chatham	27(1–70)	72	—	—	—
Aylmer, Ont.	19	—	—	72	—
Ingersoll	15	72	—	—	—
Vancouver	35–B	—	67–B	—	—
	103				

[1] Minimum carload lot in thousands of pounds. B—Boat rate.

APPENDIX F

PRICING OF STEEL PRODUCTS

(In these Tables, as in the text to which they relate, "delivered base prices" are exclusive of customs duties)

Foundry Pig Iron: Base Prices in Canada and United States

(dollars per gross ton)
f.o.b. Mill

Date	Hamilton	Sault Ste. Marie		Buffalo	Chicago
			[2]		
July 1, 1937	25.00	25.00	21.89	24.00	—
July 1, 1947	[1]	36.50	33.53	33.00	33.00
July 1, 1950	[1]	46.50	46.24	46.50	46.50
July 1, 1953	[1]	57.00	57.00	56.50	56.50
July 1, 1954	56.00	56.00	53.84	56.50	56.50
July 1, 1955	56.00	56.00	53.13	56.50	56.50
May 1, 1956	60.50	60.50	n.a.	60.50	60.50
Aug. 15, 1956	63.00	63.00	59.49	63.00	63.00

[1] No sales by Hamilton producers.
[2] Since there have been practically no sales in Sault Ste. Marie, the average return at the mill is also shown.

Canadian Foundry Pig Iron: Delivered Prices, May 1956

(dollars per gross ton)

Montreal		Toronto		Hamilton		Windsor		Winnipeg		Vancouver	
Base	Net	Base	Net	Base	Net	Base	Net	Base	Net	Base	Net
64.48	65.48	63.47	66.25	60.50	61.50	63.78	64.78	72.50	73.50	76.50	77.50

Hot Rolled Carbon Steel Bars: Base Prices in Canada and United States

(dollars per 100 lbs.)
f.o.b. Mill

Date	Montreal	Hamilton	Sault Ste. Marie		United States
				[1]	
July 1, 1937	2.65 to 2.80	2.70	n.a.	2.355	2.45 to 2.60
July 1, 1947	2.95 to 3.10	3.00	2.75	2.68	2.60
July 1, 1950	3.75	3.75	3.75	3.55	3.45
July 1, 1953	4.725	4.725	4.825	4.825	4.15
July 1, 1954	4.60	4.60	4.60	4.19	4.15
July 1, 1955	4.60	4.60	4.60	4.16	4.30
Jan. 1, 1956	4.80	4.80	4.80	4.41	4.65
Aug. 15, 1956	5.15	5.15	5.05	4.79	5.075

[1] Since there have been practically no sales at Sault Ste. Marie the average return at the mill is also shown.

Canadian Hot Rolled Carbon Steel Bars: Delivered Prices, January, 1956

(dollars per 100 lbs.)

Montreal		Toronto		Hamilton		Windsor		Winnipeg		Calgary		Vancouver	
Base	Net	Base	Net	Base	Net	Base	Net	Base	Net	Base	Net	Base	Net
4.80 to 5.06	5.10 to 5.36	4.93	5.23	4.80 to 4.95	5.10 to 5.25	4.99	5.29	5.97 to 6.65	6.27 to 6.95	7.05	7.35	5.66 to 5.80	5.96 to 6.10

Standard Rails of 85 lbs. per ft.: Base Prices in Canada and United States

(dollars per net ton)
f.o.b. Mill

Date	Canadian[1]	United Kingdom[2]	United States
July 1, 1937	39.28	—	37.80
July 1, 1947	48.21	—	50.00
July 1, 1953	90.00	96.00	86.50
July 1, 1954	90.00	84.99	89.00
July 1, 1955	88.00	84.37	89.00
May 1, 1956	94.50	—	94.50
Aug. 15, 1956	101.50	—	101.50

[1] These are prices to public carriers. Until January 1956 slightly higher price to other users.
[2] Base price f.o.b. port of shipment to Vancouver.

Estimated Delivered Prices of Standard Rails, September 1955

(dollars per net ton)

	Canadian	United Kingdom
At Vancouver	112.60	100.16

Structural Shapes: Base Prices in Canada and United States

(dollars per net ton)
f.o.b. Mill

Date	Sault Ste. Marie	[2]	Pittsburgh, Chicago, Geneva	Buffalo
July 1, 1937	54.00[1]	47.10	45.00—46.00	45.00—48.00
July 1, 1947	59.00	56.20	50.00	50.00
July 1, 1953	93.50	92.20	82.00	83.00
July 1, 1954	92.00	84.80	82.00	83.00
July 1, 1955	92.00	84.40	85.00	86.00
May 1, 1956	96.00	n.a.	92.00	93.00
Aug. 15, 1956	101.00	99.20	100.00	101.00

[1] Delivered base price at Toronto.
[2] Since the sales at Sault Ste. Marie have been small, the average mill return is also shown.

Structural Shapes: Delivered Base Prices at Selected Points

(dollars per net ton)

		Destinations					
Date	Source of Steel	New Glasgow, N.S.	Quebec	Montreal	Toronto	Winnipeg	Vancouver
July 1, 1937	Canadian	—	—	—	54.00	—	—
April 1, 1937	United Kingdom	—	53.10	53.10	—	—	54.20
July 1, 1953	Canadian	—	—	103.50	104.90	125.90	135.50
July 1, 1953	United Kingdom	114.20	100.20	100.20	110.00	134.40	112.20
July 1, 1954	Canadian	110.40	103.80	101.00	93.00	114.80	124.00
July 1, 1954	United Kingdom	112.40	92.00	92.00	103.00	126.40	97.00
July 1, 1955	Canadian	109.20	103.80	100.00	93.00	114.00	105.00
July 1, 1955	United Kingdom	112.60	103.40	103.40	112.60	134.30	110.00

Structural Shapes: Delivered Net Prices for 12″ I Beams

(dollars per net ton)

Date	Source of Steel	Destinations: Montreal	Destinations: Vancouver
July 1, 1953	Canadian[1]	109.50	141.50
	United Kingdom[2]	109.20	121.20
July 1, 1954	Canadian	110.00	133.00
	United Kingdom	101.00	106.60
July 1, 1955	Canadian	109.00	114.00
	United Kingdom	115.40	122.00
January 1, 1956	Canadian	116.20	121.00
	United Kingdom	145.00	135.20

[1] Prices for 12″ x 31·8 lb. I Beams
[2] Prices for 12″ x 5″ x 32 lb. Beams.

Hot Rolled Carbon Steel Plates: Base Prices in Canada and United States

(dollars per 100 lbs.)
f.o.b. Mill

Location of Plants	July 1947	July 1950	July 1953	July 1954	July 1955	Jan. 1956	Aug. 1956
Hamilton	3.10	3.85	4.725	4.60	4.70	4.85	5.15
Pittsburgh, Youngstown, Gary, Buffalo, Johnstown, Sparrows Point	2.65	3.50	4.10	4.10	4.225	4.50	4.85

Hot Rolled Carbon Steel Plates: Delivered Base Prices

(dollars per 100 lbs.)

Sources	Montreal	Toronto	Winnipeg	Calgary	Vancouver
		July 1, 1955			
Canadian	4.97	4.83	5.87	6.40	5.35
United Kingdom	5.34	5.80	6.885	6.815	5.57
United States[1]	4.985	4.655	5.645	5.915	5.165
		January, 1956			
Canadian	5.22	4.98	6.32[2]	7.15[2]	5.95[2]
United States[1]	5.26	4.93	5.92	6.19	5.44

[1] U.S. shipments from mills nearest to each Canadian marketing point.
[2] No provision made for freight allowance.

Hot Rolled Carbon Steel Plates: f.o.b. Base Prices at Canadian Mills and British Ports

(dollars per 100 lbs.)

Date	Sources	Ultimate Destinations: Montreal	Toronto	Winnipeg	Calgary	Vancouver
July 1953	Canadian	4.725	4.725	4.725	4.725	4.725
	United Kingdom	4.43	4.43	4.59	4.93	4.93
July 1954	Canadian	4.60	4.60	4.30	4.10	4.25
	United Kingdom	3.96	3.96	3.96	4.18	4.18
July 1955	Canadian	4.60	4.70	4.40	4.10	4.25
	United Kingdom	4.44	4.44	4.44	4.57	4.57

Hot Rolled Sheet: Base Prices in Canada and United States

(dollars per 100 lbs.)
f.o.b. Mill

Location of Plants	July 1937	July 1947	July 1953	July 1954	July 1955	Jan. 1956	Aug. 1956
Hamilton [1]	2.90	2.95	4.575	4.25–4.50	4.20–4.45	4.50	4.80
Pittsburgh, Youngstown, Gary, Buffalo, Sparrows Point	2.40	2.50	3.925	3.925	4.05	4.325	4.675
Fairless	—	—	—	3.975	4.10	4.375	—

[1] Base prices for shipments to Montreal and Toronto.

Hot Rolled Sheet: Delivered Base Prices, July 1955

(dollars per 100 lbs.)

Sources	Destinations				
	Montreal	Toronto	Winnipeg	Calgary	Vancouver
Canadian[1]	4.57-4.82	4.33-4.58	5.57-5.87	6.00-6.35	5.20-5.55
United States	4.81	4.48	5.47	5.68	4.99

[1] Freight allowances included in calculations for Winnipeg, Calgary and Vancouver.

Cold Rolled Sheet: Base Prices in Canada and United States

(dollars per 100 lbs.)
f.o.b. Mill

Location of Plant	July 1953	July 1954	July 1955	Jan. 1956	Aug. 1956
Hamilton	5.475	5.35	5.25	5.45	6.05
Pittsburgh, Gary, Buffalo, Sparrows Point	4.775	4.775	4.95	5.325	5.75
Fairless	—	4.825	5.00	5.375	—

Cold Rolled Sheet: Delivered Net Prices, July 1955

(dollars per 100 lbs.)

Source	Destinations	
	Montreal	Vancouver
Canadian	6.22	6.95
United Kingdom	6.87	7.07

Cold Rolled Sheet: Delivered Base Prices, January 1956

(dollars per 100 lbs.)

Source	Montreal	Toronto	Winnipeg	Vancouver
Canadian	5.82	5.58	6.92	6.55
United States[1]	6.085	5.755	6.745	6.265

[1] U.S. shipments from mills nearest to each Canadian marketing point.

Tinplate

(dollars per 100 lbs.)
f.o.b. Mill

Location of Plant	July 1950	July 1953	July 1954	July 1955	Jan. 1956	Aug. 1956
			(1.25 lb. cokes; base box of 100 lbs.)			
Hamilton	8.15	9.95	9.70	9.70	9.70	10.10
Pittsburgh, Gary	7.30	8.70	8.70	8.80	9.20	9.60
Fairless	—	—	8.80	8.90	9.30	9.70
			(.25 lb. Electrolytic: base box of 100 lbs.)			
Hamilton	7.15	8.40	8.20	8.20	8.20	8.60
Pittsburgh, Gary	6.35	7.40	7.40	7.50	7.90	8.30
Fairless	—	—	7.50	7.60	8.00	8.40

Tool Steels: Base Prices Ex Warehouses in Canada

(cents per pound)

	July 1953		July 1954		July 1955	
	United Kingdom	Canada	United Kingdom	Canada	United Kingdom	Canada
	Specification C.75 W 18.00 Cr. 4.00 V 1.00 p.c.					
Ontario and Quebec	150	130	105	120	105	105
Winnipeg	150	132	105	122	105	107
Vancouver	150	134	105	124	105	109
	Specification C.28 Mn .30 Si .30 W 9.50 Cr 3.25 V .40 p.c.					
Ontario and Quebec	130	105	90	90	90	90
Winnipeg	130	105	90	92	90	92
Vancouver	130	107	90	94	90	94
	Specification C 2.25 Mn .30 Si .25 Cr 12.50 V .25 p.c.					
Ontario and Quebec	67	67	67	67	67	67
Winnipeg	67	69	67	69	67	69
Vancouver	67	71	67	71	67	71
	Specification C .45 Mn .25 Si .30 W 2.00 Cr 1.50 V .25 p.c.					
Ontario and Quebec	50	49.5	50	49.5	50	49.5
Winnipeg	50	51.5	50	51.5	50	51.5
Vancouver	50	53.5	50	53.5	50	53.5
	Specification C .90 Mn 1.20 Si .30 W .50 Cr .50 p.c.					
Ontario and Quebec	35	35	35	35	35	35
Winnipeg	35	37	35	37	35	37
Vancouver	35	39	35	39	35	39

Stainless Steel: Base Prices, f.o.b. Warehouses in Canada

(dollars per lb.)

Date	Source of Steel AISI Type	Montreal 304	Montreal 316	Toronto 304	Toronto 316	Winnipeg 304	Winnipeg 316	Edmonton 304	Edmonton 316	Vancouver 304	Vancouver 316
	BARS										
July 1953	Canadian	.3775	.5575	.3775	.5575	.4025	.5825	.4225	.6025	.4125	.5925
	United Kingdom [1]	.3948	.4752	.3953	.4857	.4204	.5006	.4383	.5187	.4466	.5270
	United States [2]	.3840	.5658	.3240	.5658	.4094	.5910	.4275	.6091	.4358	.6174
July 1954	Canadian [3]	.3950	.5875	.3950	.5875	.4200	.6125	.4400	.6325	.4300	.6225
	United Kingdom [1]	.3972	.4712	.4088	.4828	.4226	.4966	.4407	.5147	.4490	.5230
	United States [2]	.4252	.6261	.4252	.6261	.4506	.6515	.4687	.6696	.4770	.6779
July 1955	Canadian	.4275	.6450	.4275	.6450	.4525	.6700	.4725	.6900	.4625	.6800
	United Kingdom [1]	.3839	.4971	.3951	.5083	.4105	.5237	.4262	.5394	.4370	.5502
	United States [2]	.4363	.6498	.4363	.6498	.4629	.6764	.4786	.6921	.4894	.7029
	PLATES										
July 1953	Canadian	.4025	.5875	.4025	.5875	.4325	.6175	.4675	.6525	.4375	.6225
	United Kingdom [1]	.4604	.5493	.4709	.5598	.4858	.5747	.5039	.5928	.5522	.6011
	United States [2]	.4092	.5965	.4092	.5965	.4958	.6231	.5115	.5388	.5223	.6496
July 1954	Canadian [3]	.4225	.6225	.4225	.6225	.4525	.6525	.4875	.6875	.4575	.6575
	United Kingdom [1]	.4337	.5156	.4453	.5272	.4591	.5410	.4772	.5591	.4855	.5674
	United States [2]	.4527	.6619	.4527	.6619	.4793	.6885	.4950	.7042	.5058	.7150
July 1955	Canadian	.4550	.6475	.4550	.6475	.4850	.6775	.5200	.7125	.4900	.6825
	United Kingdom [1]	.4448	.5581	.4560	.5693	.4714	.5847	.4871	.6004	.4979	.6112
	United States [2]	.4641	.6858	.4641	.6858	.4907	.7124	.5064	.7281	.5172	.7389
	SHEET										
July 1953	Canadian	.4700	.6225	.4700	.6225	.5000	.6525	.5350	.6875	.5050	.6575
	United Kingdom [1]	.4798	.5686	.4905	.5791	.5052	.5940	.5233	.6121	.5316	.6204
	United States [2]	.4986	.6524	.4986	.6524	.5252	.6790	.5409	.6947	.5517	.7055
July 1954	Canadian [3]	.4650	.6650	.4650	.6650	.4950	.6950	.5300	.7300	.5000	.7000
	United Kingdom [1]	.4551	.5470	.4667	.5486	.4805	.5624	.4986	.5805	.5069	.5888
	United States [2]	.4967	.7060	.4967	.7060	.5233	.7326	.5390	.7483	.5498	.7591
July 1955	Canadian	.5000	.6900	.5000	.6900	.5300	.7200	.5650	.7550	.5350	.7250
	United Kingdom [1]	.4681	.5784	.4793	.5896	.4947	.6050	.5104	.6207	.5212	.6315
	United States [2]	.5309	.7527	.5309	.7527	.5575	.7793	.5732	.7950	.5840	.8058

[1] Duty free entry.
[2] Includes duty.
[3] Oct. 11, 1954.

APPENDIX G

ROLLING MILL EQUIPMENT OF THE BASIC STEEL PRODUCERS IN CANADA, 1939 AND 1955

Algoma Steel Corporation, Limited

1939	1955
One 35″, 2-high 1-stand, reversing blooming mill One 32″, 2-high 1-stand, reversing billet mill One 30″, 3-high 3-stand, rail and structural mill One 18″, 2- and 3-high 4-stand, bar mill One 12″, 2- and 3-high 5-stand, bar mill One 56″, 2- and 3-high 4-stand, sheet and tin mill One 40″ to 60″, 2-high 6-stand, cold-finishing mill	One 44″, 2-high 1-stand, reversing blooming mill One 25″, 2-high 6-stand and 2 vertical stand, billet mill One rail and structural mill One 32″, 2-high 1-stand, reversing breakdown mill and, one 30″, 2- and 3-high 3-stand, rail and structural mill interchangeable with one 22″, 2- and 3-high 3-stand, structural mill One 18″, 2- and 3-high 4-stand, bar mill One 12″, 2- and 3-high 5-stand, bar mill One continuous bar and strip mill One 21″, 2-high 5-stand and 2 vertical stand, roughing mill and, one 30″, 4-high 6-stand and 3 vertical stand, strip mill interchangeable with one 12″, 2-high 8-stand, bar mill One 30″, 4-high 1-stand, reversing cold strip mill One 30″, 2-high 1-stand, reversing temper mill

Atlas Steels Limited

1939	1955
One 16″, 3-high 2-stand, cogging mill One 10″, 3-high 5-stand, bar mill	One 26″, 2-high 1-stand, reversing blooming mill One 22″, 3-high 1-stand, billet mill One 10″, 3-high 13-stand, bar mill One 10″, 3-high 7-stand, bar mill One 60″, 2-high 4-stand, sheet mill One 20″, planetary strip mill One 30″, 2-high 1-stand, hot finishing mill One 50″ cold sheet mill One 19″ cold strip mill One 60″ skin pass mill One 24″ strip temper mill

Dominion Foundries and Steel Limited

1939	1955
One 84″, 2-high 1-stand, reversing combination universal and sheared plate mill One 84″, 4-high 1-stand, reversing plate mill One 42″, 4-high 1-stand, reversing cold rolling mill	One 84″, 2-high 1-stand, reversing combination universal and sheared plate mill One 60″, 4-high 1-stand, reversing hot strip mill One 34″, 4-high 1-stand, reversing cold-rolling mill One 36″, 4-high 1-stand, reversing cold-rolling mill One 42″, 4-high 1-stand, reversing cold-rolling mill One 56″, 4-high 1-stand, reversing cold rolling mill Two 42″, 4-high temper mills in tandem

Dominion Steel and Coal Corporation Limited

1939	1955
Sydney, Nova Scotia	Sydney, Nova Scotia
One 38″, 2-high 1-stand, reversing blooming mill	One 40″, 2-high 1-stand, reversing blooming mill
One 16″, continuous billet mill	One 16″, 2-high 7-stand, continuous billet mill
One 28″, 3-stand rail mill	One 28″, 3-stand, rail mill
One 12″, semi-continuous, 12-stand, bar and rod mill	One 12″, semi-continuous, 12-stand, bar and rod mill
One 10″, continuous, 14-stand, rod mill	One 10″, continuous, 14-stand rod mill
Trenton, Nova Scotia	Montreal, Quebec
One 48″, 3-high 1-stand, plate mill	One 18″, 3-high 4-stand, bar mill
One 18″, 3-high 2-stand, roughing mill	One 16″, 3-high 6-stand, bar mill
One 9″, 3-high 6-stand, finishing mill	
One 9″, 3-high 7-stand, guide mill	
One 9″, 3-high 6-stand, guide mill	
Montreal, Quebec	
One 14″, 3-high 4-stand, bar mill	
One 9″, 3-high 5-stand, bar mill	

The Steel Company of Canada, Limited

1939	1955
Hamilton, Ontario	Hamilton, Ontario
One 44″, 2-high 1-stand, reversing blooming mill	One 44″, 2-high 1-stand, reversing blooming mill
One 34″, 2-high 1-stand, reversing blooming mill	One 34″, 2-high 1-stand, reversing blooming mill
One 18″, 2-high 8-stand, billet and sheet bar mill	One 18″, 2-high 8-stand, continuous billet mill
One 12″—10″, 2-high 16-stand, continuous rod and bar mill	One 12″—10″, 2-high 20-stand, continuous rod and bar mill
One 10″— 9″, 2- and 3-high 8-stand, bar mill	One 10″— 9″, 2- and 3-high 8-stand, bar mill
One 18″—10″, 2- and 3-high, 10-stand, bar mill	One 16″—10″, 2- and 3-high, 10-stand, bar mill
One 20″, 2- and 3-high 3-stand, bar mill	One 20″, 2- and 3-high, 3-stand, bar mill
One 52″, 2-high, roughing, sheet mill	One 56″, 4-high 6-stand, continuous, hot strip mill
One 48″, 3-high, roughing, sheet mill	One 56″, 4-high 5-stand, continuous, cold-rolling strip mill
One 60″, 2-high, sheet mill	One 66″, 2-high 1-stand, cold-finishing mill
One 40″, 2-high, sheet mill	One 56″, 2-high 1-stand, cold-finishing mill
One 56″, 2-high, finishing, sheet mill	One 60″, 2-high 1-stand, skin pass mill
One 48″, 2-high, finishing, sheet mill	One 56″, 4-high 2-stand, tandem, temper mill
One 44″, 2-high, finishing, sheet mill	Montreal, Quebec
One 60″, 2-high, jobbing, sheet mill	One 18″, 2- and 3-high, 3-stand, bar mill
Six 26″, 2-high, cold-rolling, sheet mills	One 18″—9″, 2- and 3-high, 8-stand, bar mill
Montreal, Quebec	
One 18″, 2- and 3-high, 3-stand, bar mill	
One 18″—9″, 2- and 3-high, 8-stand, bar mill	

APPENDIX H (1)

DATA PERTAINING TO PROCUREMENT OF RAW MATERIALS

Pig Iron Capacity of the Companies Operating Blast Furnaces in Canada[1] (as of December 31, 1955)

Company	Location of Plant	No. of Furnaces	Annual[2] Capacity (net tons)	Percent of Capacity
Dominion Steel & Coal Corporation Ltd.	Sydney, N.S.	3	544,000	14·84
The Steel Company of Canada Ltd.	Hamilton, Ont.	4	1,241,000	33·86
Dominion Foundries and Steel Ltd.	Hamilton, Ont.	1	328,000	8·94
Algoma Steel Corporation Ltd.	Sault Ste. Marie, Ont.	5	1,280,000	34·91
Canadian Furnace Co. Ltd.[3]	Port Colborne, Ont.	2	273,000	7·44
Total		15	3,666,000	100·00

[1] Mineral Resources Information Circular, M.R. 17, Department of Mines and Technical Surveys, Ottawa, March 29, 1956.

[2] Capacity—the production the given equipment will turn out in a year, working at normal efficiency, 24 hours a day,—without reference to materials, labour supply or markets, although allowing for such shutdowns as may be necessary for repair, overhaul or rebuilding.

[3] Subsidiary of Algoma Steel Corp. Ltd.

APPENDIX H (2)

Production and Consumption of Iron Ore in Canada 1948-1955[1] (tons of 2,240 lbs.)

Year	Total Domestic Production	Charged to Blast Furnaces			Domestic Production as a Percentage of Total Ore Charged	Domestic Ore Charged as a Percentage of Total Ore Charged
		Domestic	Imported	Total		
1948	1,193,968	173,156	3,318,462	3,491,618	34·2	5·0
1949[2]	3,281,336	988,616	2,445,371	3,433,987	95·6	28·8
1950	3,218,983	1,248,850	2,477,501	3,726,351	86·4	33·5
1951	4,179,027	1,318,250	2,829,090	4,147,340	100·8	31·8
1952	4,707,008	1,254,283	3,104,782	4,359,065	108·0	28·8
1953	5,812,337	1,133,763	3,540,924	4,674,687	124·3	24·3
1954	6,572,855	703,417	2,644,002	3,347,419	196·4	21·0
1955[3]	14,536,000	1,208,474	3,411,173	4,619,647	314·7	26·2

[1] Mineral Resources Information Circular, M.R. 17, Department of Mines & Technical Surveys, Ottawa, March 29, 1956.

[2] Newfoundland iron ore included in "domestic production" for the first time.

[3] Preliminary.

Most important United States Mills competing in the Canadian Market

United States Steel Corporation	Gary, Ind.
	Chicago, Ill.
	Braddock, Pa.
	Rankin, Pa.
	Duquesne, Pa.
	Clairton, Pa.
	Fairless, Pa.
	McKeesport (National Tube Co.), Pa.
	Donora (American Steel & Wire), Pa.
	Youngstown, O.
	Lorain (National Tube Co.), O.
	Cleveland (American Steel & Wire), O.
	Duluth (American Steel & Wire), Minn.
	Geneva (Columbia-Geneva Steel Div.), Utah.
Bethlehem Steel Company	Lackawanna, N.Y.
	Sparrows Pt., Md.
	Johnstown, Pa.
	Seattle, Wash.
Republic Steel Corporation	Buffalo, N.Y.
	Chicago, Ill.
	Cleveland, O.
	Warren, O.
	Youngstown, O.
Jones & Laughlin Steel Corporation	Cleveland, O.
	Pittsburgh, Pa.
	Aliquippa, Pa.
National Steel Corporation	Buffalo (Hanna Furnace Co.), N.Y.
	Detroit (Great Lakes Steel Corp.), Mich.
	Weirton, Pa.
The Youngstown Sheet and Tube Company	Chicago, Ill.
	Indiana Harbour, Ind.
	Youngstown, O.
Inland Steel Company	Indiana Harbour, Ind.
Kaiser Steel Corporation	Fontana, Cal.
The Colorado Fuel and Iron Corporation	Tonawanda, N.Y.
	Pueblo, Col.
Interlake Iron Corporation	Toledo, O.
	Chicago, Ill.
	Duluth, Minn.
McLouth Steel Corporation	Detroit, Mich.
Detroit Steel Corporation	Detroit, Mich.
Crucible Steel Company of America	Midland, Pa.
Pittsburgh Steel Company	Monessen, Pa.
Sharon Steel Corporation	Farrell, O.
	Lowellville, O.

APPENDIX H (4)

Summary of Iron Ore receipts, 1948, by principal U.S. producers of Iron and Steel[1]

	Receipts	
	Millions of tons of 2240 lbs.	Percent of total
1. United States Steel Corporation:		
Domestic, own mines:		
(a) Operated by company	37·6	95·7
(b) Operated by Pickands Mather & Company	·8	2·0
	38·4	97·7
Purchases	·5	1·3
Imports	·4	1·0
Total receipts	39·3	100·0
2. Bethlehem Steel Company:		
Domestic, own mines:		
(a) Operated by company	1·1	7·7
(b) Operated by Pickands Mather & Company	5·2	35·4
(c) Operated by Cleveland-Cliffs Iron Company	·7	4·7
(d) Operated by M. A. Hanna Company	[2]	·3
	7·0	48·1
Purchases	3·3	22·5
Imports, own mines (Chile)	2·6	18·0
Imports, purchases	1·7	11·4
Total receipts	14·6	100·0
3. Republic Steel Corporation:		
Domestic, own mines:		
(a) Operated by company	3·6	40·5
(b) Operated by Pickands Mather & Company	·4	4·6
	4·0	45·1
Purchases	4·7	52·2
Imports	·2	2·7
Total receipts	8·9	100·0
4. Jones & Laughlin Steel Corporation:		
Domestic, own mines:		
(a) Operated by company	4·0	72·2
(b) Operated by Cleveland-Cliffs Iron Company	·2	3·5
	4·2	75·7
Purchases	1·4	24·3
Imports	—	—
Total receipts	5·6	100·0
5. The Youngstown Sheet and Tube Company:		
Domestic, own mines:		
(a) Operated by Pickands Mather & Company	3·7	68·7
Purchases	1·6	29·9
Imports	[2]	1·4
Total receipts	5·3	100·0

Summary of Iron Ore receipts, 1948, by principal U.S. Producers of Iron and Steel[1]
—Concluded

	Receipts: Millions of tons of 2240 lbs.	Receipts: Percent of total
6. Inland Steel Company:		
Domestic, own mines:		
(a) Operated by company	1·1	24·4
(b) Operated by Cleveland-Cliffs Iron Company	·4	8·4
(c) Operated by Pickands Mather & Company	·3	6·1
(d) Operated by M. A. Hanna Company	·3	6·6
(e) Operated by Republic Steel Corporation	·3	7·2
	2·4	52·7
Purchases	2·1	44·4
Imports	·1	2·9
Total receipts	4·6	100·0
7. National Steel Corporation:		
Domestic, own mines:		
(a) Operated by M. A. Hanna Company	3·6	78·6
(b) Operated by Republic Steel Corporation	·3	7·0
(c) Operated by Pickands Mather & Company	·3	5·9
(d) Operated by Cleveland-Cliffs Iron Company	·2	3·9
	4·4	95·4
Purchases	·2	3·5
Imports	[2]	1·1
Total receipts	4·6	100·0

[1] Report of the Federal Trade Commission on the Control of Iron Ore for the Antitrust Subcommittee of the Committee on the Judiciary, House of Representatives, December 24, 1952.
[2] Less than 100,000.

APPENDIX H (5)

Consumption of Iron Ore in United Kingdom Blast Furnaces[1]
(millions of tons of 2,240 lbs.)

District	1953 Domestic	1953 Imported	1954 Domestic	1954 Imported	1958[2] Domestic	1958[2] Imported
Northamptonshire, etc.[3]	5·75	0·45	5·66	0·51	6·0	0·6
Lancashire, etc.[4] / Yorkshire[5] / Sheffield	0·83	0·78	0·66	1·06	1·0	2·1
Lincolnshire	5·40	0·21	5·59	0·26	5·7	0·7
North-East Coast	2·10	3·45	1·81	3·77	2·0	5·2
Scotland	0·16	1·24	—	1·44	—	1·7
Staffordshire, etc.[6]	0·91	0·05	0·81	0·13	1·1	0·1
South Wales, etc.[7]	1·07	2·33	1·02	2·69	1·4	3·7
Northwest Coast	0·34	1·31	0·32	1·40	0·4	1·6
Total	16·56	9·82	15·87	11·26	17·6	15·7

[1] Development of the Iron and Steel Industry 1953 to 1958, Iron and Steel Board, London, England.
[2] Estimated.
[3] Northamptonshire, Derbyshire, Leicestershire, Nottinghamshire and Essex.
[4] Lancashire (other than North-West Coast), Denbighshire, Flintshire and Cheshire.
[5] Yorkshire (other than North-East Coast and Sheffield).
[6] Staffordshire, Shropshire, Worcestershire and Warwickshire.
[7] South Wales and Monmouthshire.

Rail and Lake Freight Rates on Iron Ore

A: Rail Freight Rates from Lake Superior Mines to Upper Lake Ports

	Effective[1] 12/1/55	Effective[1] 3/7/56
From Eastern Marquette Range to Marquette, Mich.	$0.73	$0.77
From Western Marquette Range to Marquette, Mich.	0.80	0.85
From Marquette Range to Escanaba, Mich.	1.00	1.06
From Menominee Range to Escanaba, Mich.	1.00	1.06
From Menominee Range to Marquette, Mich.	1.59	1.69
From Gogebic Range to Ashland, Wis.	1.00	1.06
From Gogebic Range to Escanaba, Mich.	1.60	1.70
From Cuyuna & Mesabi Ranges to Duluth, Minn., and Superior, Wis.	1.03	1.09
From Mesabi and Vermilion Ranges to Duluth and Two Harbors, Minn., and Superior, Wis.	1.03	1.09

Above rates do not include dock handling charge of $0.15 on figures in Column 1, and $0.16 on figures in Column 2, per gross ton.

B: Lake Freight Rates from Upper Lake Ports to Lower Lake Ports

	Effective 7/16/55	Effective 1956 Season
From Escanaba, Mich. to Lower Lake Michigan Ports	$1.02	$1.08
From Escanaba, Mich. to Lake Erie Ports	1.27½	1.35
From Marquette, Mich. to Lower Lake Ports	1.53	1.62
From Head of Lake Superior to Lower Lake Ports	1.70	1.80

Above rates are free on and off with the loading and unloading charges being billed separately by the dock operators.

C: Rail Freight Rates from Lower Lake Ports to Consuming Districts

	Effective[1] 12/1/55	Effective[1] 3/7/56
From Lake Erie Ports to Mahoning and Shenango Valleys, Canton, and Massillon	$1.48	$1.57
From Lake Erie Ports to Midland, Steubenville, Weirton and Neville Island	1.72	1.82
From Lake Erie Ports to Pittsburgh and Wheeling District	1.97	2.09
From Lake Erie Ports to Monessen	2.07	2.19
From Lake Erie Ports to Johnstown	2.20	2.33
From Lake Erie Ports to Virginia District	3.19	3.38

Above rates do not include handling charge from rail of vessel to car of $0.15 on figures in Column 1, and $0.16 on figures in Column 2, per gross ton.

D: Dock Charges on Iron Ore per Gross Ton

	Effective 12/1/55	Effective 3/7/56
Car to vessel at Upper Lake Docks	$0.15	$0.16
Hold to rail of vessel	0.23	0.24
Rail of vessel to car	0.15	0.16
Rail of vessel to stockpile	0.36	0.38
Dock stockpile to car	0.23	0.24
Storage per month	0.01	0.01

[1] Rates carried in Column 1 are those covered by Tariff X-175 which became effective on December 1, 1955. It is on these rates that the base prices for Lake Superior region iron ore, delivered at rail of vessel at lower lake ports, for the year 1956 were based.

Rates carried in Column 2 are those covered by the 6% increase in freight rates of Tariff X-196 which became effective on March 7, 1956. The increase in freight rates indicated in Column 2 (as applied to the delivered-at-rail-of-vessel-at-lower-lake-ports price on Lake Superior region iron ore) are for the seller's account.

SOURCE: Skillings' Mining Review, March 17, 1956.

APPENDIX H (7)

Largest Coal Mines in United States Controlled by Steel Producers [1]

Rank[2]	Company	Name of Mine	State	Production in 1954 (tons of 2000 lbs.)
1	U.S. Steel Corporation	Robena	Pa.	4,102,938
4	Mathies Coal Company	Mathies[3]	Pa.	2,154,454
6	Jones & Laughlin Steel Corporation	Vesta no. 5	Pa.	2,084,877
11	Jones & Laughlin Steel Corporation	Vesta no. 4	Pa.	1,916,512
12	United States Steel Corporation	Lynch no. 32	Ky. E.	1,774,582
15	Bethlehem Mines Corporation	Idamay no. 44	W. Va.	1,559,789
16	United States Steel Corporation	Gary no. 2	W. Va.	1,581,272
19	Inland Steel Corporation	Price	Ky. E.	1,433,130
26	Bethlehem Mines Corporation	No. 41	W. Va.	1,248,061
33	United States Steel Corporation	Lynch 30 & 31	Ky. E.	1,171,745
44	United States Steel Corporation	Bridgeport	Pa.	1,038,309

[1] Keystone Coal Buyers Manual, McGraw-Hill Publishing Co., New York, N.Y.

[2] Indicates position of mine as a producer, in relation to all United States mines, including those not owned by steel producers.

[3] Owned by Youngstown Sheet & Tube Co., Steel Company of Canada Limited, National Steel Corporation, and Pittsburgh Consolidation Coal Company.

APPENDIX H (8)

Production, Value and Output per Man per Day, at Bituminous Coal Mines in the United States 1953

State	County[1]	Production: Total (net tons)	Production: Percentage captive to steel mills[2]	Average Value per ton[3]	Average tons per man per day[4]
Col.	Las Animas	1,172,771	90*a*	$6.69	4·55
Ky.	Floyd	5,586,543	25*b*	5.85	6·26
	Harlan	10,090,002	30*c*	5.85	5·80
Pa.	Allegheny	9,853,970	20*d*	5.63	6·82
	Cambria	11,982,351	25*e*	6.44	5·16
	Fayette	9,106,610	55*f*	6.13	5·60
	Greene	11,743,043	60*g*	5.91	6·57
	Lawrence & Mercer	1,232,156	25*h*	4.03	13·00
	Washington	16,198,151	65*i*	6.17	6·51
	Westmoreland	4,585,003	30*j*	5.79	6·23
Utah	Carbon	4,749,123	40*k*	5.82	7·47
	Emery	1,669,445	70*l*	5.65	7·52
West Va.	Marion	10,843,691	30*m*	5.10	9·86
	McDowell	18,362,423	45*n*	6.17	6·19
	Randolph	1,428,732	50*o*	5.89	5·70

[1] Most important counties only.

[2] Tariff Board estimate; based on tonnages shipped from captive mines.

[3] Values received or charged for coal f.o.b. mine, including selling cost. (Includes a value for coal not sold but used by producer, such as mine fuel and coal coked as estimated by producer at average prices that might have been received if such coal had been sold commercially.)

[4] In certain counties the average tons per man per day is large, due to auger mining, strip mining, or mechanical loading underground.

a Colorado Fuel & Iron.
b Inland (partly captive).
c U. S. Steel.
d National (partly captive), Republic.
e Bethlehem.
f National, U.S. Steel.
g Crucible, Jones & Laughlin, Stelco, U.S. Steel, Youngstown.
h Youngstown.

i Bethlehem, Jones & Laughlin, National, Republic, Stelco, U.S. Steel, Youngstown.
j Republic, Sharon.
k Kaiser (partly captive), U.S. Steel.
l U.S. Steel.
m Bethlehem, Sharon.
n Algoma, Interlake, Jones & Laughlin, Stelco, U.S. Steel, Youngstown.
o Bethlehem.

SOURCE: Basic data extracted from—Bituminous Coal and Lignite in 1953, Mineral Market Summary No. 2339, Bureau of Mines, United States Department of the Interior.

APPENDIX H (9)

Costs per Ton of Salable Coal Mined—Mines in the Durham Division, National Coal Board, United Kingdom—1953 and 1954[1]

	1953[2]	1954[3]
Costs:		
Wages (including allowance in kind)	$5.85	$6.00
Holiday pay	.34	.32
Supplementary injuries scheme	.06	.06
National insurance	.13	.13
Roof supports	.58	.55
General stores	.74	.78
Repairs and renewals	.10	.11
Power, heat and light	.44	.46
Salaries	.18	.19
Pensions	.16	.16
General expenses	.33	.39
Administrative expenses	.15	.16
Depreciation	.29	.33
Total Costs	9.35	9.64
Pithead Proceeds	9.18	9.48
Loss (before charging interest)	0.17	0.16
Annual average output per manshift worked—at the face	2·787 tons	2·808 tons
Annual average output per manshift worked—overall	1·021 tons	1·025 tons

[1] Annual Report and Statement of Accounts, National Coal Board, London, 1954.
[2] Converted at the rate of 1£=$2.7666.
[3] Converted at the rate of 1£=$2.7339.

APPENDIX H (10)

Average Unit Yields of Coke and Basic Coal-Chemical Materials per Net Ton of Coal Carbonized 1948, 1953-1955

	Canadian Average[1]				United States Average[2]			
	1948	1953	1954	1955	1948	1953	1954	1955
Coke, percentage by weight of coal carbonized	71·38	68·77	70·48	70·49	70·22	70·14	69·78	n.a.
Breeze, percentage by weight of coal carbonized	5·11	5·48	4·02	4·30	5·93	5·02	4·65	n.a.
Gas, M. cu. ft.: Total	10·97	10·76	10·40	10·67	10·23	10·19	10·28	n.a.
Burned in coking process	4·28	2·72	2·29	2·49	—	3·57	3·52	n.a.
Surplus sold or used	6·39	7·51	7·61	7·63	6·25	6·41	6·61	n.a.
Wasted	·30	·53	·50	·55	—	·21	·15	n.a.
Crude light oil, gal	n.a.	2·64	2·83	3·63	2·27	2·41	2·48	n.a.
Tar, gal	6·65	7·19	8·15	7·93	6·32	6·57	7·04	n.a.
Ammonium sulphate, lb	19·05	17·21	19·39	18·09	19·52	20·09	21·09	n.a.

[1] Algoma, Dofasco, Dosco, Stelco.
[2] Mineral Industry Surveys, United States Department of the Interior, Bureau of Mines, Washington, 1955.

APPENDIX H (11)

Steel Furnace Capacity of Algoma, Dofasco, Dosco & Stelco[1]
(as of December 31, 1955)

Company	Location of Plant	Product	No. of Furnaces	Annual Capacity[2] (tons of 2000 lbs)	Percent of Capacity
Dominion Steel & Coal Corp. Ltd.	Sydney, N.S.	Steel ingots and castings	5 basic open hearths 1 electric furnace	630,000	13·28
Canadian Tube & Steel Division of Dominion Steel & Coal Corp. Ltd.	Montreal, Que.	Steel ingots	3 electric furnaces	82,800	1·74
Steel Co. of Canada Ltd.	Hamilton, Ont.	Carbon and alloy steel ingots	13 basic open hearths 1 electric furnace	2,150,000	45·33
Dominion Foundries & Steel Ltd.	Hamilton, Ont.	Carbon and alloy steel Ingots and castings High alloy steel castings	2 oxygen furnaces 4 basic open hearths 6 electric furnaces	640,850	13·50
Algoma Steel Corporation Ltd.	Sault Ste. Marie, Ont.	Steel ingots	14 basic open hearths 2 bessemer converters	1,240,000	26·15
		TOTAL	36 basic open hearths 11 electric furnaces 2 oxygen furnaces 2 bessemer converters	4,743,650	100·0

[1] Metallurgical Works in Canada, Part I, Primary Iron and Steel, Department of Mines and Technical Surveys, Ottawa, January, 1956.

[2] Capacity—the production the given equipment will turn out in a year, working at normal efficiency, 24 hours a day,—without reference to materials, labour supply or markets, but allowing for such shutdowns as may be necessary to repair, overhaul or rebuild.

APPENDIX I

FINANCIAL STATEMENTS

ALGOMA STEEL CORPORATION LIMITED

Comparative Balance Sheets

	Consolidated as at December 31			as at April 30		
Assets	1955	1954	1953	1952	1951	1950
Current						
Cash	$ 2,090,011	$ 827,093	$ 748,244	$ 404,350	$ 5,174,646	$ 3,749,876
Marketable securities at cost	6,932,562	6,883,572	4,814,905	2,626,261	2,648,847	1,465,965
Accounts receivable	16,232,610	7,666,859	7,211,325	11,166,377	10,654,293	8,049,501
Inventories valued at the lower of cost or market	32,132,345	31,146,409	31,986,623	16,474,951	12,272,020	8,809,789
Prepaid expenses and deferred charges	975,226	1,136,780	1,074,411	375,065	384,378	381,497
	$ 58,362,754	$ 47,660,713	$ 45,835,508	$ 31,047,004	$ 31,134,184	$ 22,456,628
Investments in shares of subsidiary companies	....	....	....	$ 4,449,624	$ 4,020,424	$ 1,620,924
Fixed						
Land, buildings, plant and equipment, mining properties and leases at cost	$125,266,262	$120,862,701	$115,253,090	$ 49,561,493	$ 34,382,615	$ 30,794,012
Less accumulated depreciation and depletion	(72,844,263)	(68,248,367)	(63,745,171)	(26,730,311)	(18,587,971)	(15,346,873)
	$ 52,421,999	$ 52,614,334	$ 51,507,919	$ 22,831,182	$ 15,794,644	$ 15,447,139
	$110,784,753	$100,275,047	$ 97,343,427	$ 58,327,810	$ 50,949,252	$ 39,524,691

Liabilities	1955	1954	1953	1952	1951	1950
Current						
Bank loan	$ 3,325,000	$ 12,518,000	$ 13,718,000	....	....	....
Accounts payable and accrued liabilities						
Sundry creditors	8,596,236	7,269,971	8,297,673	$ 7,407,263	$ 4,492,954	$ 2,818,461
Subsidiary companies	....	....	....	5,102,783	1,916,115	20,424
Income and other taxes payable	2,527,884	170,140	395,704	1,610,492	3,650,121	1,645,406
	$ 14,449,120	$ 19,958,111	$ 22,411,377	$ 14,120,538	$ 10,059,190	$ 4,484,291
Deferred Credit to Income	$ 458,698	....	....	....	....	....
Deferred Taxes on Income	$ 7,292,000	$ 1,775,000	....	....	....	....
Long Term Loan	$ 12,579,648	$ 13,344,577	$ 13,731,716	....	....	....
Provision for relining and rebuilding furnaces	$ 2,064,823	$ 1,698,729	$ 2,116,264	$ 5,481,283	$ 4,965,572	$ 4,727,430
Capital Stock and Surplus						
Common shares of no par value	$ 10,274,500	$ 10,274,500	$ 10,274,500	$ 10,274,500	$ 10,274,500	$ 10,274,500
Contributed Surplus	3,071,745	3,071,745	3,071,745	....	....	....
Distributable Surplus	....	....	....	2,832,722	2,832,722	2,832,722
Earned Surplus	62,781,447	52,339,613	47,875,135	25,618,762	22,817,268	17,205,748
Deduct cost of shares acquired by subsidiary companies	(2,187,228)	(2,187,228)	(2,137,310)	....	....	....
	$ 73,940,464	$ 63,498,630	$ 59,084,070	$ 38,725,984	$ 35,924,490	$ 30,312,970
	$110,784,753	$100,275,047	$ 97,343,427	$ 58,327,810	$ 50,949,252	$ 39,524,691

ALGOMA STEEL CORPORATION LIMITED—*Concluded*

Comparative Statement of Income and Earned Surplus

	Consolidated					
	Year ended December 31		20 Month period April 30, 1952 to December 31,	Year ended April 30		
	1955	1954	1953	1952	1951	1950
Profit from operations	$ 23,254,305	$ 12,493,500	$ 38,104,452	$ 16,377,181	$ 14,783,946	$ 7,558,341
Dividends and interest on investments	721,350	237,576	313,037	144,583	163,275	43,697
	$ 23,975,655	$ 12,731,076	$ 38,417,489	$ 16,521,764	$ 14,947,221	$ 7,602,038
Provision for depreciation and depletion	$ 5,079,761	$ 4,983,681	$ 26,043,037	$ 8,191,881	$ 3,294,532	$ 1,399,055
Moving and rearranging plant	....	....	2,857,848	1,657,752	....	....
Interest on long term loan	419,675	444,198	589,114	....	....	....
Other interest—net	226,231	531,418	455,490	121,690	56,892	65,671
Contribution to Pension Funds	....	317,765	342,519	67,623	800,000	....
Remuneration of directors, including their salaries as executive officers	129,541	129,478	215,200	....	....	....
	$ 5,855,208	$ 6,406,540	$ 30,503,208	$ 10,038,946	$ 4,151,424	$ 1,464,726
Net Profit before providing for taxes on income	$ 18,120,447	$ 6,324,536	$ 7,914,281	$ 6,482,818	$ 10,795,797	$ 6,137,312
Provision for taxes on income	7,678,613	1,860,058	1,486,678	3,581,324	5,074,309	2,559,974
Net profit for year	$ 10,441,834	$ 4,464,478	$ 6,427,603	$ 2,901,494	$ 5,721,488	$ 3,577,338
Earned Surplus from previous year	52,339,613	47,875,135	41,447,532	22,817,268	17,205,748	13,628,410
Appropriation for Reserve for Contingencies	....	....	....	(100,000)	....	....
Loss on liquidation of Soo Transportation Company	....	....	....	....	(109,968)	....
Earned Surplus as at end of year	$ 62,781,447	$ 52,339,613	$ 47,875,135	$ 25,618,762	$ 22,817,268	$ 17,205,748

ATLAS STEELS LIMITED

Comparative Balance Sheets as at December 31

Assets	1955	1954	1953	1952	1951	1950
Current						
Cash	$ 5,975	$ 5,802	$ 512,321	$ 1,039,720	$ 613,532	$ 199,056
Accounts receivable	4,623,568	2,785,473	2,085,660	3,328,537	4,589,573	2,463,613
Marketable securities at cost	....	....	986,500	5,063,477	5,972,417	....
Inventories valued at thel ower of cost or market	10,153,349	7,036,794	6,676,725	8,583,147	8,908,435	5,848,666
Deposits, prepaid expenses, etc	221,855	239,336	203,856	180,928	187,583	184,217
	$ 15,004,747	$ 10,067,405	$ 10,465,062	$ 18,195,809	$ 20,271,540	$ 8,695,552
Sinking fund cash on deposit	$ 1,791	$ 1,390	....	....	....	....
Investment in shares of wholly-owned foreign subsidiary companies, at cost	$ 352,895	$ 352,895	$ 329,145	....	....	....
Fixed						
Land, buildings, machinery and equipment and leased plant at cost	$ 24,842,164	$ 24,655,222	$ 23,485,071	$ 16,828,757	$ 13,950,489	$ 12,969,237
Less accumulated depreciation	14,629,318	13,438,249	12,442,603	11,721,243	11,120,054	10,640,292
	$ 10,212,846	$ 11,216,973	$ 11,042,468	$ 5,107,514	$ 2,830,435	$ 2,328,945
	$ 25,572,279	$ 21,638,663	$ 21,836,675	$ 23,303,323	$ 23,101,975	$ 11,024,497

ATLAS STEELS LIMITED—*Concluded*

Comparative Balance Sheets as at December 31—*Concluded*

Liabilities	1955	1954	1953	1952	1951	1950
Current						
Bank overdraft	$ 366,223	$ 533,923	....	....	....	....
Accounts payable and accrued liabilities	2,686,984	1,658,672	$ 2,083,389	$ 2,100,404	$ 3,082,147	$ 2,402,733
Income taxes payable	1,051,862	....	442,621	1,392,109	2,089,638	457,917
Dividend payable	....	....	208,706	208,706	208,606	208,606
Funded debt instalment due	411,045	358,000	358,000	538,000	....	....
	$ 4,516,114	$ 2,550,595	$ 3,092,716	$ 4,239,219	$ 5,380,391	$ 3,069,256
Deferred taxes on income	$ 690,000	$ 470,000	....	....	....	....
Deferred Liability—30 year lease option	....	....	....	....	....	$ 573,397
Funded Debt						
$4\frac{3}{4}\%$ First Mortgage Sinking Fund Bonds	$ 3,553,955	$ 3,964,000	$ 4,212,000	$ 4,462,000	$ 5,000,000	....
5% Convertible Debentures 1951 issue	2,786,000	2,785,000	2,892,000	3,000,000	3,000,000	....
	$ 6,339,955	$ 6,749,000	$ 7,104,000	$ 7,462,000	$ 8,000,000	....
Capital Stock and Surplus						
Common shares of no par value	$ 267,500	$ 201,350	$ 198,650	$ 198,650	$ 190,050	$ 190,050
Earned Surplus	13,758,710	11,667,718	11,441,309	11,403,454	9,531,534	7,191,794
	$ 14,026,210	$ 11,869,068	$ 11,639,959	$ 11,602,104	$ 9,721,584	$ 7,381,844
	$ 25,572,279	$ 21,638,663	$ 21,836,675	$ 23,303,323	$ 23,101,975	$ 11,024,497

Comparative Statement of Income and Earned Surplus for the Years ended December 31

	1955	1954	1953	1952	1951	1950
Sales	$ 28,989,368	$ 16,725,957	$ 23,047,857	$ 33,754,889	$ 31,441,264	$ 17,640,917
Profit from operations	$ 5,576,641	$ 1,805,166	$ 2,918,446	$ 6,771,761	$ 7,896,173	$ 2,246,243
Provision for depreciation	$ 1,215,210	$ 1,002,023	$ 727,264	$ 652,591	$ 497,387	$ 323,266
Interest on funded debt	336,262	353,578	371,321	387,675	19,023	....
Remuneration of directors, executive officers and legal fees	114,177	94,156	90,181	104,788	99,744	120,362
Provision for loss of wholly-owned subsidiary company	....	....	10,000	....	....	....
	$ 1,665,649	$ 1,449,757	$ 1,198,766	$ 1,145,054	$ 616,154	$ 443,628
Net profit before providing for income taxes	$ 3,910,992	$ 355,409	$ 1,719,680	$ 5,626,707	$ 7,280,019	$ 1,802,615
Provision for taxes on income	[1] 1,820,000	129,000	847,000	2,920,000	3,810,000	734,500
Net profit for year	$ 2,090,992	$ 226,409	$ 872,680	$ 2,706,707	$ 3,470,019	$ 1,068,115
Earned surplus from previous year	11,667,718	11,441,309	11,403,454	9,531,534	7,191,793	6,332,285
	....	....	12,276,134	12,238,241	10,661,812	7,400,400
Dividends paid to shareholders	....	....	834,825	834,787	834,425	208,606
Funded debt discount and expenses	....	....	....	....	295,853	....
Earned surplus as at end of year	$ 13,758,710	$ 11,667,718	$ 11,441,309	$ 11,403,454	$ 9,531,534	$ 7,191,794

[1] Depreciation in excess of that recorded in the accounts to be claimed for Income Tax purposes. Income Taxes otherwise payable would be greater by $220,000 and is reserved in the Balance Sheet.

DOMINION FOUNDRIES AND STEEL LIMITED

Comparative Balance Sheets as at December 31

Assets	1955	1954	1953	1952	1951	1950
Current						
Cash	$ 1,916,650	$ 3,543,117	$ 3,180,604	$ 3,853,019	$ 1,706,043	$ 3,829,968
Marketable securities at cost	....	248,930	987,450	....	....	12,745,483
Accounts Receivable	5,983,304	4,117,503	5,541,587	4,409,017	5,143,496	3,097,460
Inventories valued at the lower of cost or market	14,678,374	11,849,223	12,865,897	11,647,644	9,046,350	5,582,403
	$ 22,578,328	$ 19,758,773	$ 22,575,538	$ 19,909,680	$ 15,895,889	$ 25,255,314
Fixed						
Land, buildings, plant and equipment, at cost	$ 86,377,885	$ 71,578,144	$ 57,252,295	$ 52,255,470	$ 49,637,373	$ 31,305,257
Less accumulated depreciation	34,443,082	30,929,105	40,193,418	33,061,624	24,293,573	20,361,018
	$ 51,934,803	$ 40,649,039	$ 17,058,877	$ 19,193,846	$ 25,343,800	$ 10,944,239
Other Assets						
Prepayments and mortgages receivable	$ 376,180	$ 383,154	$ 376,313	$ 424,149	$ 418,589	....
Goodwill	1	1	1	1	1	1
	$ 376,181	$ 383,155	$ 376,314	$ 424,150	$ 418,590	$ 1
	$ 74,889,312	$ 60,790,967	$ 40,010,729	$ 39,527,676	$ 41,658,279	$ 36,199,554

Liabilities	1955	1954	1953	1952	1951	1950
Current						
Accounts payable and accrued liabilities	$ 6,464,033	$ 4,140,511	$ 4,369,536	$ 3,582,039	$ 5,867,817	$ 3,969,849
Trustee of Employees' Savings and Profit Sharing Fund	1,633,665	1,000,970	1,268,394	1,253,632	1,140,629	497,367
Income and other taxes payable	508,649	10,669	924,137	893,983	912,576	1,241,669
Dividends payable	612,535	444,535	447,235	448,200	383,444	329,356
Funded debt instalment due	365,000	352,500	....	....	....	....
	$ 9,583,882	$ 5,949,188	$ 7,009,302	$ 6,177,854	$ 8,304,466	$ 6,038,241
Deferred Taxes on Income	$ 13,690,000	$ 9,180,000	....	....	....	....
Funded Debt						
$3\frac{1}{2}\%$ Sinking Fund Debentures	$ 4,530,000	$ 4,897,500	$ 5,250,000	$ 5,550,000	$ 5,900,000	$ 6,000,000
$4\frac{1}{2}\%$ Sinking Fund Debentures	6,000,000	6,000,000	....	....	....	....
	$ 10,530,000	$ 10,897,500	....	....	....	....
Reserve for Contingencies	....	....	$ 300,000	$ 300,000	$ 300,000	$ 300,000
Capital Stock and Surplus						
$4\frac{1}{2}\%$ cumulative redeemable sinking fund preferred shares	$ 7,514,200	$ 7,514,200	$ 7,674,200	$ 7,840,000	$ 8,000,000	$ 8,000,000
Common shares of no par value	12,710,639	9,710,639	9,710,639	9,710,639	9,371,914	6,226,224
Capital Surplus	485,800	485,800	1,040	....	....	....
Earned Surplus	20,374,791	17,053,640	10,065,548	9,949,183	9,781,899	9,635,089
	$ 41,085,430	$ 34,764,279	$ 27,451,427	$ 27,499,822	$ 27,153,813	$ 23,861,313
	$ 74,889,312	$ 60,790,967	$ 40,010,729	$ 39,527,676	$ 41,658,279	$ 36,199,554

DOMINION FOUNDRIES AND STEEL LIMITED—*Concluded*

Comparative Statements of Income and Earned Surplus for the Years ended December 31

	1955	1954	1953	1952	1951	1950
Profit from operations	$ 16,316,901	$ 10,623,167	$ 12,556,902	$ 14,206,910	$ 9,081,693	$ 7,670,779
Provision for depreciation	$ 3,525,885	$ 3,047,011	$ 7,151,582	$ 8,830,200	$ 3,954,190	$ 1,489,215
Interest on funded debt	444,151	385,665	194,179	202,776	207,881	210,000
Contribution to Employees' Savings and Profit Sharing Fund	1,649,448	1,015,927	1,277,580	1,256,565	1,145,454	1,002,160
Remuneration of directors, executive officers and legal fees	226,127	206,095	186,205	175,974	183,990	180,867
	$ 5,845,611	$ 4,654,698	$ 8,809,546	$ 10,465,515	$ 5,491,515	$ 2,882,242
Net profit before providing for taxes on income	$ 10,471,290	$ 5,968,469	$ 3,747,356	$ 3,741,395	$ 3,590,178	$ 4,788,537
Provision for taxes on income	5,000,000	2,900,000	1,840,000	1,915,000	1,925,000	2,040,000
Net profit for year	$ 5,471,290	$ 3,068,469	$ 1,907,356	$ 1,826,395	$ 1,665,178	$ 2,748,537
Earned surplus from previous year	17,053,640	10,065,548	9,949,183	9,781,899	9,635,089	6,935,904
Adjustments applicable to prior years	....	5,995,240	....	....	....	....
Capital surplus restored to earned surplus under authority of Supplementary Letters Patent dated July 13, 1950	....	....	....	....	....	1,200,000
	$ 22,524,930	$ 19,129,257	$ 11,856,539	$ 11,608,294	$ 11,300,267	$ 10,884,441
Dividends declared						
4½% preferred shares	338,139	341,739	350,991	358,200	360,000	180,000
Common shares	1,812,000	1,440,000	1,440,000	1,300,911	1,158,368	860,352
Expenses on issue of (1) sinking fund debentures and (2) preferred shares	....	(1) 129,478	....	....	....	(2) 209,000
Appropriations for the purchase for cancellation of preferred shares during 1954	....	164,400	....	....	....	....
Earned surplus as at end of year	$ 20,374,791	$ 17,053,640	$ 10,065,548	$ 9,949,183	$ 9,781,899	$ 9,635,089

DOMINION STEEL AND COAL CORPORATION LIMITED
(AND SUBSIDIARY COMPANIES)

Comparative Consolidated Balance Sheets as at December 31

Assets	1955	1954	1953	1952	1951	1950
Current						
Cash	$ 4,625,475	$ 616,403	....	$ 1,417,278	$ 7,156,302	$ 5,859,082
Marketable securities at cost	10,695,249	2,665,337	....	7,139,475	11,620,875	9,526,375
Accounts receivable	14,144,164	9,877,942	....	10,406,079	12,295,395	11,570,053
Estimated income taxes recoverable	910,483	1,250,000	....	....	....	....
Inventories valued at the lower of cost or market	28,834,547	30,424,354	....	34,215,400	28,544,553	20,357,212
Insurance Premiums and other prepaid expenses	533,806	735,014	....	496,401	576,806	490,853
	$ 59,743,724	$ 45,569,053	....	$ 53,674,636	$ 60,193,935	$ 47,803,578
Fixed						
Land, ore and limestone deposits, buildings, machinery and equipment, railway, dockyards, steamships, etc.	$139,843,409	$130,819,175	....	$111,509,191	$ 94,090,341	$ 84,700,830
Less accumulated depreciation	72,103,698	66,816,530	....	53,351,217	48,478,859	43,603,009
	67,739,711	64,002,645	....	....	....	41,097,820
Funds held by trustee, to be used for Seaboard Power Corporation Limited plant extension	458,564	139,376	....	....	....	736,186
	$ 68,198,275	$ 64,142,022	....	$ 58,157,974	$ 45,611,482	$ 41,834,007
Other Assets						
Investments in shares of subsidiary companies not consolidated	$ 1,961,092	$ 2,252,470	....	$ 2,252,470	$ 2,252,470	$ 1,742,472
Funds on deposit with trustees	577,138	595,253	....	582,978	943,449	792,586
Other investments and miscellaneous assets	869,696	740,893	....	1,093,897	550,921	691,394
Unamortized bond and debentures discount	436,081	186,675	....	194,166	215,348	....
	$ 3,844,007	$ 3,775,293	....	$ 4,123,513	$ 3,962,189	$ 3,226,453
	$131,786,006	$113,486,368	....	$115,956,124	$109,767,607	$ 92,864,039

DOMINION STEEL AND COAL CORPORATION LIMITED
(AND SUBSIDIARY COMPANIES)—*Concluded*

Comparative Consolidated Balance Sheets as at December 31—*Concluded*

Liabilities	1955	1954	1953	1952	1951	1950
Current						
Bank loans and overdrafts	....	$ 2,916,986	....	$ 7,239,723	....	$ 795,000
Accounts payable and accrued liabilities						
Sundry creditors	$ 9,897,730	5,456,188	....	8,571,212	$ 7,484,603	3,724,208
Employees' wages	3,488,616	3,308,387	....	3,097,658	2,543,433	2,054,795
Subsidiary companies	162,189	196,800	....	487,697	998,298	377,179
Income and other taxes payable and accrued	1,442,669	1,106,203	....	3,912,874	5,299,704	3,080,530
Dividend payable	520,091	519,916	....	519,916	415,933	779,312
Funded debt instalments due and interest accrued	1,239,593	1,218,481	....	1,668,921	1,825,066	1,584,978
	$ 16,750,888	$ 14,722,965	....	$ 25,498,004	$ 18,567,040	$ 12,396,005
Other Liabilities						
Deferred payments on properties	....	....	....	$ 193,393	$ 525,473	$ 857,553
Special bank loan	....	....	....	....	36,500	182,500
	....	....	....	$ 193,393	$ 561,973	$ 1,040,053
Funded Debt						
First mortgage bonds	$ 12,312,800	$ 11,369,300	....	$ 11,092,300	$ 12,151,500	$ 13,221,200
4% Convertible debentures	7,956,000	7,970,000	....	7,970,000	7,970,000	....
4¼% Convertible sinking fund debentures	10,000,000	....	....	....	....	....
	$ 30,268,800	$ 19,339,300	....	$ 19,062,300	$ 20,121,500	$ 13,221,200
Provision for relining furnace	$ 843,112	....	....	....	....	....
Reserves						
Operating and Contingency	$ 5,776,594	$ 4,206,778	....	$ 6,447,851	$ 7,880,727	$ 7,443,083
Capital cost allowances	18,076,430	13,726,429	....	....	....	....
	$ 23,853,024	$ 17,933,208	....	....	....	....
Capital Stock of Acadia Coal Company Limited held by the public	$ 92,650	$ 92,650	....	$ 95,200	$ 95,200	$ 95,200
Capital Stock and Surplus						
Common shares of no par value	$ 26,021,075	$ 26,007,075	....	$ 26,007,075	$ 26,007,075	$ 25,977,075
Capital Surplus	8,199,883	9,600,866	....	10,015,866	10,015,866	10,015,866
Earned Surplus	25,756,574	25,790,303	....	28,636,434	26,518,225	22,675,556
	$ 59,977,532	$ 61,398,244	....	$ 64,659,375	$ 62,541,166	$ 58,668,497
	$131,786,006	$113,486,368	....	$115,956,124	$109,767,607	$ 92,864,039

Comparative Consolidated Statements of Income and Earned Surplus for the Years ended December 31

	1955	1954	1953	1952	1951	1950
Combined profits from operations	$ 12,444,251	$ 12,038,925	....	$ 12,468,551	$ 17,187,722	$ 11,450,414
Miscellaneous income	539,402	483,584	....	1,066,786	527,976	864,259
	$ 12,983,653	$ 12,522,510	....	$ 13,535,337	$ 17,715,698	$ 12,314,673
Provision for depreciation	$ 5,498,681	$ 5,259,735	....	$ 4,729,946	$ 5,409,312	$ 3,626,056
Pensions paid and contributions to employees' pension fund	1,178,608	....	....	....	....	....
Interest on funded debt	1,123,400	844,752	....	783,725	621,017	533,944
Interest on bank and other loans	87,661	496,016	....	159,490	61,535	73,638
	$ 7,888,350	$ 6,600,504	....	$ 5,673,162	$ 6,091,866	$ 4,233,639
Net profit before providing for taxes on income	$ 5,095,303	$ 5,922,006	....	$ 7,862,175	$ 11,623,832	$ 8,081,033
Provision for taxes on income	2,200,000	2,600,000	....	3,664,300	6,170,000	3,600,000
Net profit for year	$ 2,895,303	$ 3,322,006	....	$ 4,197,875	$ 5,453,832	$ 4,481,033
Earned Surplus from previous year	25,790,303	26,792,963	....	26,518,225	22,675,556	19,753,146
Transfer of accumulated gains on disposal of fixed assets, redemption of bonds, etc., formerly carried in capital surplus	1,400,984	....	....	....	....	....
	$ 30,086,590	$ 30,114,969	....	$ 30,716,100	$ 28,129,388	$ 24,234,180
Capital cost allowances in excess of normal provision for depreciation reduced by resultant reduction in income taxes	2,250,000	2,245,000	....	....	....	....
Dividends paid to shareholders	2,080,016	2,079,666	....	2,079,666	1,611,163	1,558,624
Earned Surplus as at end of year	$ 25,756,574	$ 25,790,303	....	$ 28,636,434	$ 26,518,225	$ 22,675,556

THE STEEL COMPANY OF CANADA

Comparative Consolidated Balance Sheets as at December 31

Assets	1955	1954	1953	1952	1951	1950
Current						
Cash	$ 5,029,437	$ 4,439,302	$ 4,175,018	$ 3,938,058	$ 3,132,658	$ 3,204,638
Marketable securities at cost	52,735,872	39,250,270	29,356,331	16,934,029	39,284,681	26,404,034
Deposit with Trust Company	....	....	....	....	....	1,500,000
Due from employees on Government of Canada bond subscriptions	2,051,766	1,216,928	1,457,363	1,409,924	1,404,643	1,071,181
Accounts receivable	24,716,274	16,986,613	21,038,498	21,438,309	19,727,253	16,161,784
Inventories valued at lower of cost or market	38,629,067	33,284,298	40,954,174	39,024,543	27,545,453	23,631,938
Prepaid expenses	255,456	431,781	435,009	321,089	233,930	266,399
	$123,417,872	$ 95,609,192	$ 97,416,393	$ 83,065,952	$ 91,328,618	$ 72,239,974
Investments in and advances to associated coal and ore mining companies, at cost	$ 10,692,160	$ 9,149,058	$ 7,562,854	$*14,435,944	$ 12,084,101	$ 9,175,731
Fixed						
Plants and properties at cost	$216,945,645	$203,371,156	$195,743,938	$*170,478,871	$131,497,897	$113,689,338
Less accumulated depreciation and depletion	143,579,072	132,562,838	119,029,845	96,364,590	79,204,431	67,680,896
	$ 73,366,573	$ 70,808,318	$ 76,714,093	$ 74,114,281	$ 52,293,466	$ 46,008,442
	$207,476,605	$175,566,568	$181,693,340	$171,616,177	$155,706,185	$127,424,147

* Approximately $10,500,000 transferred to fixed assets in 1953.

Liabilities	1955	1954	1953	1952	1951	1950
Current						
Bank loan	....	....	$ 10,000,000	$ 10,000,000	....	....
Accounts payable and accrued liabilities	$ 20,069,763	$ 12,777,792	13,066,959	14,603,799	$ 13,266,360	$ 8,446,693
Income and other taxes payable	17,647,373	9,285,977	10,534,075	6,524,931	9,718,265	8,770,139
Dividend payable	2,406,203	2,220,889	2,035,685	1,799,630	1,799,630	1,799,630
Serial notes payable	477,500	770,687	770,687	769,460	929,500	914,780
	$ 40,600,839	$ 25,055,345	$ 36,407,406	$ 33,697,820	$ 25,713,755	$ 19,931,242
Funded Debt						
$2\frac{3}{4}\%$ Sinking fund debentures	$ 16,652,000	$ 17,192,000	$ 17,890,000	$ 17,936,000	$ 19,291,000	$ 19,627,000
$3\frac{3}{8}\%$ " " "	11,975,000	11,975,000	14,225,000	14,450,000	15,000,000	....
Serial notes payable	697,500	400,000	1,170,687	1,941,375	1,020,000	2,066,470
	$ 29,324,500	$ 29,567,000	$ 33,285,687	$ 34,377,375	$ 35,311,000	$ 21,693,470
Provision for relining and rebuilding furnaces	$ 2,584,893	$ 2,086,604	$ 1,434,757	$ 3,366,039	$ 3,885,711	$ 4,171,567
Reserve for Contingencies	$ 2,588,673	$ 2,588,673	$ 2,588,673	$ 2,588,673	$ 2,588,673	$ 2,588,673
Capital Stock and Surplus						
7% Cumulative preferred shares	....	....	....	$ 6,496,300	$ 6,496,300	$ 6,496,300
Common shares of no par value	$ 18,395,750	$ 18,395,750	$ 18,395,750	11,500,000	11,500,000	11,500,000
Earned Surplus	113,981,951	97,873,196	89,581,067	79,589,970	70,210,746	61,042,895
	$132,377,700	$116,268,946	$107,976,817	$ 97,586,270	$ 88,207,046	$ 79,039,195
	$207,476,605	$175,566,568	$181,693,340	$171,616,177	$155,706,185	$127,424,147

THE STEEL COMPANY OF CANADA—*Concluded*

Comparative Consolidated Statements of Income and Earned Surplus for the Years ended December 31

	1955	1954	1953	1952	1951	1950
Net Sales	$227,006,261	$176,571,148	$204,226,613	$190,214,161	$180,789,204	....
Profit from operations	$ 59,275,541	$ 44,072,958	$ 49,351,948	$ 43,956,829	$ 44,487,365	$ 35,304,266
Net income from investments	594,587	676,117	397,399	328,684	485,823	208,452
	$ 59,870,128	$ 44,749,075	$ 49,749,347	$ 44,285,513	$ 44,973,188	$ 35,512,718
Provision for depreciation and depletion	$ 13,975,120	$ 14,734,752	$ 18,990,437	$ 17,548,731	$ 12,474,792	$ 7,574,828
Interest on funded debt	868,441	928,897	995,181	1,045,090	980,709	612,514
Contributions to Pension Trust Funds	1,335,000	1,790,000	1,700,688	1,500,000	1,400,000	1,200,000
Remuneration of directors, executive officers and legal fees	400,781	420,330	413,868	380,457	363,249	358,455
	$ 16,579,342	$ 17,873,979	$ 22,100,174	$ 20,474,278	$ 15,218,750	$ 9,745,797
Net profit before providing for taxes on income	$ 43,290,786	$ 26,875,096	$ 27,649,173	$ 23,811,235	$ 29,754,438	$ 25,766,921
Provision for taxes on income	21,472,148	13,644,037	13,391,733	10,647,777	16,455,196	11,783,233
Net profit for the year	$ 21,818,638	$ 13,231,059	$ 14,257,440	$ 13,163,458	$ 13,299,242	$ 13,983,688
Earned Surplus at beginning of year	97,873,196	89,581,067	79,589,970	70,210,746	61,042,895	51,018,393
Difference between par value and cost of debentures retired	27,789	58,015	24,483	174,952	....	....
	$119,719,623	$102,870,141	$ 93,871,893	$ 83,549,156	$ 74,342,137	$ 65,002,081
Expenses—Plan of Arrangement	....	....	78,448	....	....	....
Debenture discount and expense	....	....	....	....	172,205	....
Dividend paid to shareholders	5,737,673	4,996,945	4,212,378	3,959,186	3,959,186	3,959,186
Earned Surplus at end of year	$113,981,950	$ 97,873,196	$ 89,581,067	$ 79,589,970	$ 70,210,746	$ 61,042,895

APPENDIX J

FIRMS, ASSOCIATIONS, FEDERATIONS, INSTITUTES, COUNCILS, CHAMBERS AND UNIONS THAT MADE REPRESENTATIONS

Acme Steel Company of Canada, Ltd.,	Toronto, Ont.
Advance Steel Products Limited,	Chatham, Ont.
Air Industries & Transport Association of Canada,	Ottawa, Ont.
Ajax-Precision Manufacturing Co., Limited	Toronto, Ont.
Algoma Manufacturing Tool & Die Company	Oshawa, Ont.
Algoma Steel Corporation, Limited	Sault Ste. Marie, Ont.
Allied Engineering of B.C. Limited	Vancouver, B.C.
American Nickeloid Company	Toronto, Ont.
Armco Drainage & Metal Products of Canada Ltd	Guelph, Ont.
Atlas Steels Limited	Welland, Ont.
Atlantic Service Co. Limited	Toronto, Ont.
Balfour, Arthur, & Co. (Canada) Limited	Montreal, Que.
Barnes, Wallace, Company, Limited	Hamilton, Ont.
Berkel Products (Canada) Limited	Toronto, Ont.
Bethlehem Steel Export Company of Canada, Limited	Montreal, Que.
Brantford Coach and Body Limited	Brantford, Ont.
Bridge & Tank Co. Canada Limited	Hamilton, Ont.
Bristol Cutlery Co	Montreal, Que.
British Columbia Loggers' Association (Incorporated)	Vancouver, B.C.
British Columbia Lumber Manufacturers Association	Vancouver, B.C.
British Iron and Steel Federation	London, England
Burlington Steel Company Limited	Hamilton, Ont.
Butler Metal Products Limited	Preston, Ont.
Canada Barrels & Kegs Limited	Waterloo, Ont.
Canada Cycle and Motor Company Limited	Weston, Ont.
Canada Foundries & Forgings Limited	Welland, Ont.
Canada Illinois Tools Limited	Toronto, Ont.
Canadian Acme Screw & Gear, Limited	Toronto, Ont.
Canadian Association of Consumers	Ottawa, Ont.
Canadian Automobile Chamber of Commerce	Toronto, Ont.
Canadian Cooperage Association	London, Ont.
Canadian Crittall Metal Window Limited	Toronto, Ont.
Canadian Electrical Manufacturers Association	Toronto, Ont.
Canadian Federation of Agriculture	Ottawa, Ont.
Canadian Institute of Steel Construction (Inc.)	Toronto, Ont.
Canadian Institute of Stove and Furnace Manufacturers	Toronto, Ont.
Canadian Motor Lamp Company, Limited	Windsor, Ont.
Canadian Petroleum Association	Calgary, Alta.
Canadian Pulp and Paper Association, Western Division	Vancouver, B.C.
Canadian Steel Strapping Company Limited	Montreal, Que.
Canadian Vickers Limited	Montreal, Que.
Canadian Western Pipe Mills Ltd	Port Moody, B.C.
Casewin Company	Toronto, Ont.
Clare Brothers Limited	Preston, Ont.
Coles, A. J., Company Limited	Ridgetown, Ont.
Consolidated Red Shingle Association of British Columbia	Vancouver, B.C.
Coulter Manufacturing Company, Limited	Oshawa, Ont.
Disston, Henry, & Sons Limited	Toronto, Ont.
Doall Company of Canada Limited	Toronto, Ont.
Doall Eastern Canada Limited	Montreal, Que.

Dominion Chain Company Limited	Niagara Falls, Ont.
Dominion Electrohome Industries Limited	Kitchener, Ont.
Dominion Engineering Works Limited	Montreal, Que.
Dominion Foundries & Steel Limited	Hamilton, Ont.
Dominion Steel and Coal Corporation, Limited	Montreal, Que.
Dominion Structural Steel Limited	Montreal, Que.
Donaldson Company (Canada) Limited	Chatham, Ont.
Eastern Steel Products Limited	Toronto, Ont.
El-Met-Parts Limited	Dundas, Ont.
Electric Auto-Lite Ltd	Sarnia, Ont.
Electric Tamper & Equipment Co. of Canada Ltd	Lachine, Que.
Engineering Products of Canada Limited	Montreal, Que.
Essco Stamping Products Limited	Windsor, Ont.
E T F Tools Limited	St. Catharines, Ont.
Europam Corporation Limited	Montreal, Que.
Faucher & Fils Limited	Montreal, Que.
Findlays Limited	Carleton Place, Ont.
Firth Brown Steels Ltd	Montreal, Que.
Fleetwood Metal Industries	Windsor, Ont.
Galt Metal Products Limited	Galt, Ont.
General Motors Diesel Limited	London, Ont.
General Spring Products Limited	Kitchener, Ont.
General Steel Wares Limited	Toronto, Ont.
Glo-Hill Cutlery Company, Limited	Verdun, Que.
Hard Metal Fabricators Ltd	Toronto, Ont.
Harrisons & Crosfield (Canada) Ltd	Montreal, Que.
Hayes Steel Products Limited	Merritton, Ont.
Heating & Sheet Metal Association of B.C	Vancouver, B.C.
Huron Steel Products Company, Limited	Windsor, Ont.
Inglis, John, Co. Limited	Toronto, Ont.
International Silver Company of Canada Limited	Niagara Falls, Ont.
Interprovincial Farm Union Council	Winnipeg, Man.
Johnstel Metal Products Limited	Windsor, Ont.
Kelsey Wheel Company, Limited	Windsor, Ont.
Kinney, Joseph, Company, Inc	Carnegie, Pa.
Kitchen Installations Ltd	Ajax, Ont.
Kitchener Electronics Limited	Kitchener, Ont.
Kralinator Limited	Preston, Ont.
Ladish Co. of Canada Ltd	Brantford, Ont.
Leamington Tool & Stamping Company	Leamington, Ont.
Leeds Bridge & Iron Works	Gananoque, Ont.
Levene Die Company, Limited	Kitchener, Ont.
London & Petrolia Barrel Co. Limited	London, Ont.
Machinery & Equipment Manufacturers' Association of Canada	Montreal, Que.
Massey-Harris-Ferguson Limited	Toronto, Ont.
McAlpine, Sir Robert, & Sons (Canada) Ltd	Montreal, Que.
McCord Corporation	Windsor, Ont.
McFarlane Gendron Manufacturing Co. Limited	Toronto, Ont.
McGlashan Silverware, Limited	Bells Corners, Ont.
McKinnon Columbus Chain Limited	St. Catharines, Ont.
McKinnon Industries Limited	St. Catharines, Ont.
Moffats, Limited	Weston, Ont.
Montreal Hardware Manufacturing Co. (Limited)	Montreal, Que.
Montreal Locomotive Works, Limited	Montreal, Que.
Moore, George T., Company Registered	Montreal, Que.
Morrison Steel & Wire Co. Limited	Vancouver, B.C.

Morrow Screw and Nut Company Limited..Ingersoll, Ont.
Motor Products Corporation..Walkerville, Ont.
National Auto Radiator Mfg. Co. Ltd..Windsor, Ont.
Nicholson File Company of Canada Ltd..Port Hope, Ont.
Northern Interior Lumbermen's Association..Vancouver, B.C.
Oakton Products Limited..Scarborough, Ont.
Oneida Limited..Toronto, Ont.
Ontario Steel Products Company Limited..Toronto, Ont.
Oregon Saw Chain Limited..Guelph, Ont.
Oshawa Engineering & Welding Co..Oshawa, Ont.
Page-Hersey Tubes Limited..Toronto, Ont.
Phil Wood, Industries Limited..Windsor, Ont.
Pickard, Louis & Company Inc..Montreal, Que.
Plywood Manufacturers' Association of B.C..Vancouver, B.C.
Porcelain and Metal Products Limited..Orillia, Ont.
Production Metal Products..Blenheim, Ont.
Purolator Products (Canada) Limited..Toronto, Ont.
Richards-Wilcox Canadian Company, Limited..London, Ont.
Ryder, J. H., Machinery Company Limited..Toronto, Ont.
Saint John Dry Dock Co. Ltd..East Saint John, N.B.
Sehl Engineering Limited..Kitchener, Ont.
Shefner, D. A., & Co. Ltd..Vancouver, B.C.
Sherman, N.C., Limited..Vancouver, B.C.
Shurly-Dietrich-Atkins Co. Limited..Galt, Ont.
Simonds Canada Saw Co. Limited..Montreal, Que.
Sivaco Wire and Nail Co..Marieville, Que.
S.K.D. Manufacturing Co., Ltd..Amhertsburg, Ont.
Skillcraft Limited..St. Catharines, Ont.
Smith Bros. Motor Bodies Limited..Toronto, Ont.
Smith, Kirkaldy, Dennison Manufacturing Co. Ltd..Amherstburg, Ont.
Sparling Tank Limited..Toronto, Ont.
Spear & Jackson (B.C.) Limited..Vancouver, B.C.
St. Lawrence Manufacturing Co. Inc..Quebec, Que.
Standard Products (Canada) Limited..Windsor, Ont.
Standard Structural Steel Limited..Montreal, Que.
Standard Tube and T.I. Limited..Woodstock, Ont.
Stanley Works of Canada Limited..Hamilton, Ont.
Steel Company of Canada, Limited..Hamilton, Ont.
Sweeney Cooperage Ltd..Vancouver, B.C.
Taylor Forge & Pipe Works of Canada, Ltd..Hamilton, Ont.
Thompson Products Limited..St. Catharines, Ont.
Tole Gaufree "Ideale" Enrg..St. Hyacinthe, Que.
Tri-Sure Products Ltd..St. Catharines, Ont.
Truck Loggers' Association..Vancouver, B.C.
Truscon Steel Company..Toronto, Ont.
United-Carr Fastener Company of Canada Limited..Hamilton, Ont.
United Nail and Foundry Company, Limited..St. John's, Nfld.
United Steelworkers of America..Toronto, Ont.
Vanadium-Alloys Steel Canada Limited..London, Ont.
Vanco Metals Limited..Toronto, Ont.
Wallace, R., & Sons of Canada, Limited..Toronto, Ont.
Welland Vale Manufacturing Company, Limited..St. Catharines, Ont.
Westeel Products Limited..Toronto, Ont.
Zettel Manufacturing Co., Ltd..Kitchener, Ont.

EDMOND CLOUTIER, C.M.G., O.A., D.S.P.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1957

Canada. Tariff Board

Report by

THE TARIFF BOARD

Relative to the Investigation Ordered
by the Minister of Finance
respecting

PIPES AND TUBES OF IRON OR STEEL

•

Reference No. 119

Report by

THE TARIFF BOARD

Relative to the Investigation Ordered
by the Minister of Finance
respecting

PIPES AND TUBES OF IRON OR STEEL

•

Reference No. 119

82676—1

OTTAWA, Feb. 28, 1957.

The Honourable,
The Minister of Finance,
Ottawa.

Dear Mr. Minister:

Reference No. 119

In accordance with your direction to the Tariff Board to conduct an inquiry regarding Pipes and Tubes of Iron or Steel,—

I have the honour to transmit herewith for tabling in Parliament under the provisions of Section 6 of the Tariff Board Act, the Report of this Board in connection with the aforesaid Reference, in English and in French. A copy of the transcript of the information secured at various public hearings accompanies this Report.

Yours faithfully,

H. B. McKINNON,
Chairman.

82676—1½

TABLE OF CONTENTS

THE TARIFF BOARD

Reference No. 119

An Inquiry Respecting Pipes and Tubes of Iron or Steel

The letter from the Minister of Finance, dated September 14, 1955, directing the Tariff Board to conduct the inquiry which is the subject of this Report, was as follows:

> I have received a number of representations to the effect that the provisions of the Customs Tariff relating to iron or steel pipes and tubes are in need of review and revision in the light of developments which have taken place since many of the present provisions were introduced.
>
> In this connection various proposals have been submitted, some of which would result in tariff increases, either directly, or indirectly through the removal of special tariff treatment now accorded to pipes and tubes imported for certain end uses. Other suggestions would involve the reduction of some rates. It appears desirable that all interested parties be given an opportunity to express their views regarding the tariff provisions in question, particularly at this time when the Board already has before it Reference No. 118 relating to primary iron and steel, including skelp.
>
> I therefore direct the Tariff Board to make a study and report under Section 4(2) of the Tariff Board Act on the items in Schedules "A" and "B" of the Customs Tariff which relate to pipes and tubes of iron or steel and fittings or couplings therefor. It is my intention that this study should cover the following items in their entirety:

396	398	399*a*
396*a*	398*a*	399*b*
397(*a*)	398*b*	399*c*
397(*b*)	398*c*	400
397(*c*)	398*d*	1017
397(*d*)	398*e*	1018
	399	1018*a*

> It should also cover Items 410*d* and 848 in so far as they relate to pipes and tubes of iron or steel, and similarly other items if the Board considers them relevant to its enquiry.
>
> If the Board's study should indicate that amendments are desirable, I would request the Board to prepare a revised schedule of tariff items, with recommendations as to rates of duty, and to include the proposed schedule in its report.

In preparing this proposed schedule I would expect that the Board would have regard to the rates applicable to other related or comparable products of iron or steel.

In drawing up a revised schedule the Board should keep in mind the obligations and procedures of the General Agreement on Tariffs and Trade. In this regard it is recognized that certain adjustments in margins of preference may be involved; however, it is not the intention that there should be any general change in preferential margins.

Yours sincerely,
W. E. HARRIS.

In its inquiry, the Board gave consideration at public sittings to a total of 25 items of the Customs Tariff (Schedule A) and to three drawback items (Schedule B to the Tariff). The new Schedule recommended in this Report has been prepared after close study of all the items listed (by number) in the letter of the Minister of Finance, as well as of certain other items which, in the opinion of the Board, were not merely relevant but necessary for a full inquiry *re* Pipes and Tubes.

Public Sittings Held

Public sittings of the Board under this Reference were held at Ottawa as follows:

June 18, 19, 20, 21 and
June 25, 26, 27, 1956.

A nominal roll of participants in any or all of the public proceedings is incorporated herein as Appendix B.

A transcript of the proceedings at all public sittings is attached to this copy of the Report, for the Table of Parliament.

Apart from evidence put on record at public sittings, the Board secured for its own use considerable material of a confidential nature which, in accordance with the provisions of the Tariff Board Act, will be so treated.

Visits to Industries

During the course of the Inquiry, the following plants were visited by one or more members of the Board and their assistants:

Alberta Phoenix Tube & Pipe Limited, Edmonton, Alta.
Allied Ironfounders Limited, United Kingdom
The Anthes-Imperial Company Limited, Winnipeg, Man.
A. M. Byers Company, Pittsburgh, Pa.
Canada Iron Foundries, Limited, Trois Rivieres, Que.
Canadian Tube & Steel Products Limited, Montreal, Que.
Canadian Western Pipe Mills Ltd., Port Moody, B.C.
Page-Hersey Tubes, Limited, Welland, Ont.
South Durham Steel & Iron Co. Ltd., United Kingdom
Standard Tube and T. I. Limited, Woodstock, Ont.
Stewarts and Lloyds, Limited, Corby Works, United Kingdom
Taylor Forge and Pipe Works of Canada, Limited, Hamilton, Ont.
United States Steel Company
    National Tube Division, Gary, Indiana
Warden King Limited, Montreal, Que.

PART I

THE PIPE AND TUBE INDUSTRY

Development and Status

The iron and steel pipe and tube industry in Canada manufactures a wide variety of products, ranging from cast-steel pipe fittings two inches in diameter to 15-inch cast-iron soil-pipe; and, in steel pipe, from a fraction of an inch to 16 inches in diameter, the latter shortly to be increased to 36 inches. Within these size ranges, many different types of pipe and tubes are made, such as soil-pipe, water-pipe, seamless, buttweld, electric-weld, boiler tubes, oil and gas well-casing.

The pipe and tube industry consists of four distinct parts, with only a slight amount of overlapping: for example, one firm may produce both soil- and water-pipe, while another may produce both pipe and fittings. In practically every instance, however, the overlap is small. The main divisions of the industry are along the following lines of production: (1) steel pipes and tubes, (2) cast-iron soil-pipe, (3) cast-iron water-pipe, (4) iron and steel pipe fittings.

The Steel Pipe and Tube Industry: The steel pipe and tube industry consists of those firms which manufacture buttwelded pipe, electric-resistance welded pipes and tubes, seamless pipes and tubes, submerged-arc welded pipe, and seamless, welded and close-joint tubing. In September of 1956, eleven firms were actively producing. Four other firms, Alberta Phoenix Tube & Pipe, Limited, Edmonton; Mannesmann Tube Co. Ltd., Sault Ste. Marie; Welland Tubes, Ltd., Welland; and Prairie Pipe Company, Ltd., Regina, hope to be in production later in 1956 or in 1957.

In 1955, steel pipe and tube producers employed over 3,000 workers and paid out wages and salaries of more than $12 million. In the same year they purchased about $39 million of materials and shipped products valued at $68 million. One firm, Page-Hersey Tubes, Limited, produced approximately 70 p.c. of the total output of this division of the industry.

The development of the industry to its present magnitude is perhaps best appreciated through a study of the development of the large existing firms.

A company which eventually became part of The Steel Co. of Canada, Limited was the pioneer in the field. Buttwelded steel pipe was first made in Canada by J. and C. Hodgson in 1880 in Cote St. Paul, adjoining Montreal. The successor firm, Hodgson Iron and Tube Co., was absorbed by Montreal Rolling Mills in 1910. The latter firm, which had begun the manufacture of buttwelded black pipe in Montreal in 1881 in the size range three-quarter inch to two inches in diameter, subsequently became a part of the Stelco organization. Stelco's present buttwelding mill, capable of making pipe four inches O.D. and smaller, was installed in 1927 at St. Henry Works, Montreal.

Page-Hersey Iron and Tube Co., Ltd., the third firm to enter the steel pipe field, began production in Montreal in 1897, manufacturing buttwelded steel pipe up to four inches in diameter. In 1902 the company moved to Guelph, Ontario, and in 1908 installed a lapwelding mill capable of producing pipe from two to 12 inches in diameter. (This mill remained in operation until 1949.) In 1911 the company built a factory at Welland, Ontario, bringing a buttwelding mill into operation there. The company's name was changed to Page-Hersey Tubes, Limited, in 1920. In 1921 a plant for the manufacture of light-walled tubing up to two inches O.D. by the oxy-acetylene welding process was installed.

In 1931 a seamless pipe mill, in 1942 a cold-drawn mill, and in 1946 an electric-resistance welding mill, were installed. In 1949 the company installed two more electric-resistance welding mills, and in the same year consolidated all its manufacturing operations at Welland.

The next firm to enter the field was Canadian Tube and Iron Works, which in 1911 began the production of buttwelded pipe from one-half to four inches in diameter. In 1920 this company merged with two others to become Canadian Tube & Steel Products Limited which in 1943 became a subsidiary of Dosco.

A predecessor of today's Standard Tube and T.I. Limited, Standard Tube and Fence Co., Ltd., emerged in 1912 and until 1920 manufactured only "butted" tubing for use in the manufacture of beds and fence posts. Experiments with acetylene welding of tubing were begun in 1919. The company became Standard Tube Co., Ltd., in 1921, and installed the first electric-resistance welding mill in Canada in 1937. In 1951 Tube Investments, Great Britain, became partners in the firm, which then changed its name to Standard Tube and T.I. Limited.

In 1952 Barton Tubes, Ltd., of Burlington, began production of light-gauge electric-resistance welded tubing. Atlas Steels Limited began producing stainless steel tubing in 1954. Some smaller firms entered the light-tubing industry in the 1950's.

In 1954 Canadian Western Pipe Mills came into production at Port Moody, B.C.

Burlington Steel Co., Limited, of Hamilton, founded in 1910, began the manufacture of butted tubing in 1925. In 1934 it began the manufacture of welded tubing.

The names, locations, products and pipe-sizes of the firms now in, or shortly to enter, the steel pipe and tube industry, are tabulated below:

Name	Location	Method	Size
	Welded Steel Pipe		
Page-Hersey Tubes, Limited	Welland	Continuous-weld (buttweld)	¼″ I.D.—4″ I.D. (4½″ O.D.)
		Electric-resistance	4½″ O.D.—16″ O.D.
The Steel Co. of Canada, Limited	Montreal	Buttweld	½″ I.D.—4″ I.D.
Burlington Steel Co., Limited	Hamilton	Acetylene	1¼″—1.625″
Canadian Tube & Steel Products Limited	Montreal	Buttweld	½″ I.D.—4″ I.D.
Canadian Western Pipe Mills Ltd	Port Moody, B.C.	Electric-resistance	½″ I.D.—4″ I.D.
Alberta Phoenix Tube & Pipe, Ltd	Edmonton	Buttweld	3½″ I.D.—12¾″ O.D.
*Prairie Pipe Company, Ltd.	Regina	Buttweld	3½″ O.D.—16″ O.D.
*Welland Tubes, Ltd	Welland	Submerged-arc (electric)	20″ O.D.—36″ O.D.
	Light Steel Tubing		
Page-Hersey Tubes, Limited	Welland	Electric-resistance and close-joint (unwelded)	0.375″—4.0″ O.D.
Standard Tube and T.I., Limited	Woodstock	Electric-resistance	0.1875″—3.0″ O.D.
Barton Tubes Limited	Burlington	Electric-resistance	0.5″—3.0″ O.D.
Atlas Steels Limited	Welland	Electric-resistance	0.25″—2.375″ O.D.
Tubular Steel Products Limited	Scarboro (Toronto).	Various	0.5″—1.5″ O.D.
Sonco Steel Products, Ltd	Toronto	Various	0.5″—1.5″ O.D.
Sasco Tubes Limited	Toronto	Close-joint (unwelded)	0.5″—2.0″ O.D.
	Seamless Steel Pipe and Tube		
Page-Hersey Tubes, Limited	Welland		⅛″ I.D.—7″ O.D.
*Mannesmann Tube Co. Ltd	Sault Ste. Marie		4½″ O.D.—10¾″ O.D.
Standard Tube and T.I. Limited	Woodstock		Up to 3″ O.D.

* Not in production on November 15, 1956.

As the above references to new firms indicate, the steel pipe industry is currently undergoing an expansion which is unprecedented. To a very large extent this development flows directly from the growing demand for oil-country goods, which are at present largely imported, and for line pipe, which must be imported in the larger sizes. With the completion of the Mannesmann plant at Sault Ste. Marie, Canada will have two sources of domestic supply for oil-country goods. These two producers jointly will have the capacity to supply more than Canadian requirements alone. At Welland Tubes, pipe up to 36 inches will be made—more than double the maximum diameter of pipe which can at present be made in Canada. Alberta Phoenix Tube & Pipe, Limited, is now operating a new mill in Edmonton which produces line pipe to a maximum of slightly under 13 inches in diameter. It is understood that a new firm at Regina, The Prairie Pipe Company, hopes to be producing line pipe sometime during 1957.

The Cast-Iron Soil-Pipe Industry: Cast-iron soil-pipe and fittings are manufactured by some 21 firms located in Quebec, Ontario, Manitoba, Alberta, and British Columbia, many of them producing rather small amounts. Most of these firms manufacture other products as well, such as plumbing and heating equipment, boilers, and iron castings. Three firms, Warden King Limited, The Anthes-Imperial Company, Limited, and Associated Foundry Limited, taken together, account for over 60 per cent of all shipments of cast-iron soil-pipe by Canadian producers. Some indication of the history of the industry is as follows:

Warden King Limited, founded in Montreal in 1852, began the manufacture by hand of cast-iron soil-pipe and fittings in the 1860's. About 1911, moulding machines were installed and mass production by the continuous pouring process was set in operation. Warden King became a wholly-owned subsidiary of Crane, Limited, in 1926, and at present manufactures in the size range two inches to 12 inches, inclusive.

The Anthes-Imperial Company's predecessor, the Toronto Foundry Company, founded in 1894, began the manufacture of cast-iron soil-pipe in that same year. At present Anthes manufactures pipe at St. Catharines in the size range two inches to 15 inches, at Winnipeg in the size range two inches to 10 inches, and at Edmonton in the range two inches to four inches.

Associated, at Vancouver, in 1945 took over the operations of Anthes-Tait Foundry which had been making soil-pipe and fittings since about 1910. At present Associated manufactures in the size range two inches to six inches.

The producers of cast-iron soil-pipe and fittings in 1955 are listed at the end of this section.

The Cast-Iron Water-Pipe Industry: At present cast-iron pressure-pipe, used largely in municipal waterworks systems, is made by some four producers located in Quebec, Ontario, Manitoba, and Alberta. Two firms, Canada Iron Foundries, Limited and The Anthes-Imperial Company, Limited, made over 90 per cent of all cast-iron water-pipe made in Canada in 1955. The industry's history is substantially the history of these two companies.

One of the companies acquired by Canada Iron Foundries, Limited, namely, Gartshore-Thompson Pipe and Foundry Co., Ltd., made cast-iron water-pipe in 1880 in Hamilton, while a direct antecedent of C.I.F., Canada Iron Furnace Co., Ltd., manufactured pit-cast pipe at Trois Rivieres in 1889. The Delavaud method of centrifugally spinning cast-iron water-pipe was first undertaken by National Iron Corporation of Toronto in 1919, which became part of C.I.F. in 1927. In 1950, the Trois Rivieres plant of C.I.F. was converted from the pit-cast to the Delavaud method. Delavaud pipe equipped with mechanical

joint accounts for about 80 per cent of all C.I..F's pipe sales. Bell- and spigot-pipe is also made. The present size range of C.I.F. is from four inches to 16 inches, inclusive, in the company's Toronto plant, and from four inches to 24 inches, inclusive, in the Trois Rivieres plant.

Anthes-Imperial began the production of hand-cast water-pipe about 1927, and at present makes hand-cast universal pressure-pipe at its Winnipeg plant in the size range two inches to 12 inches, inclusive.

The firms in this industry in 1955 are listed at the end of this section.

The Iron and Steel Fittings Industry: This section of the industry consists of those firms which manufacture cast-iron and malleable-iron pipe fittings, cast-steel pipe fittings, buttwelding steel pipe fittings, flanged steel pipe fittings, and steel pipe flanges. The pipe fittings industry is younger than any of the other three branches of the industry group considered in this Report.

Crane Limited, of Montreal, founded in 1919, began production of both cast-iron and malleable-iron pipe fittings in that year. Flanged steel pipe fittings were first produced in 1935 and steel buttwelding fittings in 1948. The company manufactures the rough iron castings from which it finishes cast-iron fittings, but its cast-steel fittings are made from purchased steel castings.

Taylor Forge and Pipe Works of Canada, Limited, began operations in 1951. The firm manufactures forged welding pipe fittings from steel and from genuine wrought-iron, and forged pipe flanges from both steel and cast-iron. The company completely manufactures pipe welding elbows and return bends in sizes eight inches and smaller, but sizes larger than eight inches are imported in rough-forged form for finishing.

Canadian Coupling and Fittings, which makes only a steel pipe coupling, began manufacturing in 1955. Tube Turns of Canada, Ltd., began the manufacture of welding pipe fittings in 1950; manufacturing consists of finishing rough elbows and return bends, the rough fittings being imported from the parent company in the United States. Steel pipe fittings are also made by Ladish Co. of Canada, Ltd., located in Brantford. Certain of the steel pipe producers also make couplings and fittings.

Steel Pipe Producers

Canadian Tube & Steel Products Limited, Montreal, P.Q.
Barton Tubes Limited, Burlington, Ont.
Page-Hersey Tubes, Limited, Welland, Ont.
Standard Tube and T.I. Limited, Woodstock, Ont.
Atlas Steels Limited, Welland, Ont.
Canadian Western Pipe Mills Ltd., Vancouver, B.C.
Mannesmann Tube Co. Ltd., Sault Ste. Marie, Ont.
Alberta Phoenix Tube & Pipe, Limited, Edmonton, Alta.
Burlington Steel Co. Limited, Hamilton, Ont.
Sonco Steel Products Limited, Toronto, Ont.
The Steel Co. of Canada, Limited, Montreal, P.Q.
Sasco Tubes, Limited, Toronto, Ont.
Tubular Steel Products Limited, Scarboro (Toronto), Ont.

Cast-Iron Soil-Pipe and Fittings

Binette & Frere, Laurierville, P.Q.
La Fonderie Ste. Croix Limitee, Ste. Croix, P.Q.
Fonderie Magog Limitee, Magog, P.Q.
M. I. Viau & Fils, Limitee, St. Jerome, P.Q.

St. Jerome Industries Ltd., St. Jerome, P.Q.
The Anthes-Imperial Company, Limited, St. Catharines, Ont.
Associated Foundry Limited, Vancouver, B.C.
Warden King Limited, Montreal, P.Q.
La Fonderie Bourget, Windsor Mills, P.Q.
The Anthes-Imperial Company, Limited, Edmonton, Alta.
La Fonderie Paquette Enrg., Laprairie, P.Q.
Bibby Foundry, Limited, Galt, Ont.
J. A. Wotherspoon & Son, Limited, Oakville, Ont.
Tweed Engineering & Foundry Ltd., Tweed, Ont.
Soil Pipe & Fittings Limited, Mimico (Toronto), Ont.
Lincoln Foundry Co., Limited, St. Catharines, Ont.
The Anthes-Imperial Company, Limited, Winnipeg, Man.
McDonnell Metal Manufacturing Co., Limited, Vancouver, B.C.
Pease Foundry Co., Limited, Toronto, Ont.
A. E. Bock Foundry Co., Galt, Ont.
Dominion Foundry Co., Ltd., Winnipeg, Man.
J. R. Fergusson Company, Dundas, Ont.
Soil Pipe & Fittings Limited, North Burnaby, B.C.

Water-Pipe Producers

The Anthes-Imperial Company, Limited, Winnipeg, Man.
Canada Iron Foundries Limited, Trois Rivieres, P.Q.
Thos. Lawson & Sons Limited, Ottawa, Ont.
Norwood Foundry Co., Limited, Edmonton, Alta.

Pipe Fittings and Couplings Producers

Ladish Co. of Canada Ltd., Brantford, Ont.
Tube Turns of Canada, Ltd., Ridgetown, Ont.
Taylor Forge and Pipe Works of Canada, Limited, Hamilton, Ont.
Canadian Coupling & Fittings Limited, Simcoe, Ont.
Crane Limited, Montreal, P.Q.
Grinnell Company of Canada, Limited, Toronto, Ont.
Fittings, Limited, Oshawa, Ont.
International Malleable Iron Co. Ltd., Guelph, Ont.
Legare Foundry Limited, Sherbrooke, P.Q.
Ontario Malleable Iron Co., Limited, Oshawa, Ont.
Rockwell Manufacturing Company of Canada, Ltd., Guelph, Ont.
Terminal City Iron Works, Ltd., Vancouver, B.C.
Letson and Burpee, Limited, Vancouver, B.C.

How Pipes and Tubes are Made

Following is a very brief and not too complicated description of the methods of manufacture and the chief uses of the various types of pipe and tube:

Steel Pipes and Tubes: Steel pipes may be either welded or seamless. Welded pipes may be made by buttwelding (by either the bell- or continuous-welding methods), by electric-resistance welding, or by submerged-arc electric welding. Most light tubing is made by the electric-resistance welding process. Furthermore, pipes or tubes hot-formed by either a welded or a seamless process may then be cold-drawn or cold-rolled.

In the bell process of buttwelding, the raw material is a long, narrow, flat, hot-rolled piece of steel having bevelled edges and varying in width according to the diameter of pipe to be manufactured. Among pipe manufacturers, the tradi-

tional name for this raw material has been "skelp". Skelp arrives at the pipe mill in flat lengths or in coiled form. If coiled, it is unrolled and cut into lengths of 20 to 40 feet. The skelp is then passed to the clipper, a machine which shears away the corners of the front end of the piece, shapes the pointed end to start the curve for welding, and bends the skelp just back of the curve so as to elevate the pointed end for easy grasping with the welding tongs. The skelp is then stacked and sent to the buttwelding furnace where it is heated to a welding temperature of about 2,600° F. The white-hot skelp is pushed from the furnace and grasped by a workman holding a pair of tongs inserted through a die called a welding bell. The tongs are then gripped by a carriage mounted on an endless chain which pulls the tongs and skelp through the funnel-shaped welding bell. In the process, the skelp is curled until the two edges are pressed together and welded into the shape of a pipe. The pipe, still white-hot, is then run through sizing rolls which form it into a perfect circle by reducing it slightly in size. Next, it is passed through scale-removing rolls which, by squeezing the pipe slightly out of shape, break off the brittle scale. An alternative to the descaling process is to pass the pipe through a stretch-reducing mill in which the diameter of the pipe is reduced at the same time as the scale is removed. Any imperfections in the contour of the pipe are then removed by running it through straightening rolls. Finally the pipe is tested hydrostatically.

In the continuous-welding process flat white-hot skelp, on leaving the furnace, is passed over a series of rolls, successive sets of which are contoured so as to curl the edges of the skelp until they meet, thus forming a pipe. The edges of the skelp are welded together by heat and the pressure of the forming rolls. The remaining steps are the same as those outlined in the previous paragraph.

In Canada the bell-welding and continuous-welding processes are used to make buttweld pipe up to four and one-half inches O.D.

The electric-resistance welding process is used in Canada to make pipe from four and one-half inches to 16 inches O.D. It is also used to make light-walled tubing. The skelp is passed over a series of rolls, successive sets of which are contoured so as to curl the edges of the skelp until they meet. Immediately after leaving the forming rolls, the skelp passes through a pair of pressure rolls above which are placed two circular welding electrodes. The latter take the form of two water-cooled copper discs separated by insulating material and mounted so that one disc is on each side of the opening to be welded. Electric current passes from one copper disc through the skelp and into the other copper disc; the skelp's resistance to the current heats the edges of the skelp to a high temperature. The combination of heat created by resistance to the electric current and of pressure exerted by the pressure rolls causes the edges of the skelp to weld, forming a pipe. The raised surface created at the weld both inside and outside the pipe is then removed and the pipe is cooled. In the case of light-walled tubing the remaining processes are sizing, straightening, and inspection.

The final diameter of large-sized steel pipe welded by the electric-resistance method is obtained by subjecting the pipe to a cold-expansion process. The pipe is placed in an expanding machine and mandrels are forced into each end, expanding the pipe to the required diameter at the ends only. Retainer rings encircle the body of the pipe which is filled with water and expanded by hydraulic pressure to the limits of the rings. Pressure is reduced by stages and the pipe is tested by air hammers. Finally the water is released. This hydraulic expansion serves not only to increase the pipe's diameter but also to test the weld and to cold-work the steel, thereby improving its mechanical properties.

Quite a different method will be used by Welland Tubes Limited in the manufacture of submerged-arc electric welded pipe in 20 to 36 inches outside diameter. The raw material (skelp) may arrive at the mill in coils or in flats.

If in flats, the lengths will be 40 feet. The widths will be from 62 inches for 20-inch pipe to 113 inches for 36-inch pipe. The thicknesses will be from $\frac{1}{4}$ inch to $\frac{1}{2}$ inch. In the case of coils, the widths and thicknesses will be the same as in the case of flats, but the lengths will be in multiples of 40 feet. These coils will be uncoiled, flattened, and cut to individual forty foot lengths. The flat skelp now goes through a pickling process to remove any dirt, rust, or scale. The skelp then proceeds through machinery for edge trimming, edge bevelling, and edge pre-forming which latter is an initial bending of the edges. It then passes on to a U-ing press in which it is centred over a series of rocker-type dies which lie along the axis of the skelp. A downward plunging "bulb" forces the skelp in between the rocker-type dies and converging side beams which automatically conform themselves to the operation and assist in transforming the skelp into a U shape. The U-shaped skelp is then transferred to the main forming or O-ing press, consisting principally of two semi-circular dies in the lower of which the U-shaped pipe rest. The upper die, activated by three massive hydraulic rams of 5,500 tons capacity, moves downward, forming the U-shaped skelp into a cylinder, with the edges butted together and perfectly aligned for welding. The partially completed pipe is removed from the O-ing press and the butting edges of the cylinder are tack-welded to facilitate subsequent operations. The tack welds are ground flush and any offset at the ends is removed. The pipe is degreased by immersion in hot water detergent and a 4-inch tab is welded at each end of the seam to assure proper lead-in and cut-off of finish welds.

The pipe is welded in two passes by the submerged-arc welding method. It is first welded on the inside, then on the outside. The inside weld is applied by a long travelling boom which moves inside the pipe, positioned with positive accuracy over the seam (which is now at the bottom of the pipe), by a small wheel riding in the bevelled seam. Welding rods are played out to twin arcs, mounted in tandem, one in front of the other. The outside weld is applied by a stationary welding fixture (the pipe having been turned so that the seam in this case is on the top of the pipe). For the outside weld the pipe moves on rollers past twin arcs, while the operator maintains accurate seam position by sighting through a rifle sight and making minute lateral adjustments. In this process the weld is accomplished by the fusion of the virgin metal in the seam with the applied welding rod metal at a temperature of about 3,000° F. The temperature of the arc is approximately 6,000° F. Granular flux is delivered at the point of weld or fusion which gives protection against oxidation of the metal while in a molten state. After preliminary inspection, removal of welding tabs and dressing of end welds, loose scale and flux are removed. The pipe is then cold-expanded by hydraulic pressure in a manner similar to that described previously in connection with the production of electric-resistance weld pipe.

Seamless pipe is made from a long, round, solid piece of steel termed a tube-round or a tube-billet, the end of which is centre-punched to ensure concentricity in the subsequent operations. The billet, after being heated to a uniform temperature of about 2,200° F., goes direct from the furnace to the piercing machine, sometimes called a mandrel mill. In this mill, the billet is passed between two rolls whose axes incline at opposite angles of from 6 to 12° from the horizontal centre-line of the mill and are formed so that they first converge and then diverge toward the delivery side of the mill. Between the diverging faces of the rolls is set a projectile-shaped piercing mandrel mounted on the end of a long bar. As the billet is rolled between the two rolls, their pressure deforms it in such a way that the steel tends to pull away from the centre of the billet (it would do so even in the absence of the mandrel). In practice the mandrel is placed so as to start the opening up of the billet and to do so at or very near its axis. Thus the mandrel is not forced through the billet: rather, the rolls cause the hot steel to flow over and about the mandrel to produce a hollow shell. The mandrel serves

principally to guide the steel and to make the hole uniform in the centre. After leaving the mandrel mill, the hollow shell goes to the plug-rolling mill, where it is placed between the two work rolls and over a cylindrical mandrel. The pipe passes through this mill twice, being rotated 90 degrees prior to the second passage. By these operations the pipe wall is reduced to the desired gauge and its thickness is made uniform throughout. However, on leaving the plug-rolling mill, the pipe is slightly out of round and not perfectly straight. To correct these deficiencies the pipe is then passed through the rolls and over the mandrel of a reeling machine which slightly reduces it in size and burnishes both inside and outside surfaces. Finally the pipe is passed through the rolls of a sizing mill to ensure accurate diameter and perfect roundness.

Seamless pipes and tubes may also be made by the push bench process. This process starts with tube square billets, which arrive at the pipe mill in lengths 20 to 30 feet long. The sectional dimensions are 4 inches by 4 inches to $8\frac{1}{2}$ inches by $8\frac{1}{2}$ inches, depending on the wall thickness and diameter and length of pipe to be produced. The long billets are sheared to lengths approximately $12\frac{1}{2}$ inches to $34\frac{1}{2}$ inches long. A charging machine puts the billets into a rotary hearth furnace where they are heated to approximately 2,250°F. The billets are removed by a discharging machine and placed on a conveyor which takes the billets individually to a billet sizing press. This operation adds to the dimensional accuracy. The billet goes next to the vertical 600 ton hydraulic press. In this, by means of a punch and die, the solid square billet is converted into a hollow cylindrical forging with the bottom end closed like a "bottle", the punch stroke being stopped short of going all the way through the billet. This closed end is essential to the following pipe-making operations. The newly-formed steel "bottle", now moving horizontally, goes next to the elongator machine where barrel-shaped rolls and an internal plug reduces the diameter, making the "bottle" longer. It also evens up the wall thickness, giving good concentricity of wall in the finished tube. The "bottle" goes next to the roller die bed, still travelling on the horizontal. A long bar or mandrel is inserted and pushing against the closed end, propels the "bottle" through a series of roller dies, each with a decreasing size of opening. The thick walls of the short "bottle" are gradually rolled or pushed back up the mandrel bar. In this operation the actual pipe or tube is formed and the wall thickness reduced to the approximate dimension of the finished tube. The tube then passes through a reeler which reeling operation smooths the outside surface and slightly raises the inside surface of the tube from the mandrel bar on which it has been rolled. The mandrel bar is withdrawn and the tube goes to the crop end saw where the solid nose end and open or tail end are cut off. The tube then goes through a re-heating furnace and from this through the reducing mill which sizes the tube to its final dimensions. The pipe or tube is then put through a rotary straightening machine, hydrostatically tested, and inspected.

The cold-drawing of pipes and tubes may be undertaken to obtain wall thickness, diameters, lengths, shapes, better surface finishes, closer dimensional tolerances, or higher mechanical properties than are obtainable by hot working. The first step is the reduction in diameter of the first six inches or so of the pipe in a pointing machine so that the end of the pipe may enter the die. The drawing process itself consists of pulling the pipe through a die, the hole of which is smaller than the outside diameter of the pipe to be drawn. At the same time a mandrel on the end of a rod supports the inside surface of the pipe. In the process the diameter of the pipe and the thickness of its wall are reduced.

An additional method of cold-working tubing is the Tube Reducing or Rockrite or Micro Rock process. When tubing is required to have close

concentricity of internal or external diameter, or an especially smooth internal finish, or improved machinability, this process is used. The tube is squeezed and rotated between two semi-circular dies having tapering semi-circular grooves in their curved faces. The two dies are placed one above the other and are geared to move in opposite directions. Their faces trace a converging circular pass as the dies are moved laterally. A stationary, tapering mandrel is held inside the pipe, which is elongated and reduced in wall thickness and diameter by the pressure exerted by the mandrel and converging rolls.

Buttwelded pipe four and one-half inches O.D. and under finds its major outlet in the plumbing and heating trades. Some is used in the surface flow lines of oil and natural gas gathering systems. Other uses are in agricultural implements, railway rolling stock, mines (air and water lines), sprinkler systems, and skating rinks.

Electric welded pipe four and one-half inches to 16 inches O.D. is used in oil and natural gas pipelines, in municipal waterworks systems (in which use it competes with cast iron pressure pipe), in mines, and in industrial plants generally for heating and steam lines.

Seamless pipe is used in oil-country goods, in the high pressure lines of oil refineries, and in the chemical industry in applications characterized by high pressure or by either extremely high or extremely low temperatures.

Boiler tubes, which may be either electric welded or seamless, are used, as the name suggests, in manufacturing boilers. Consequently they ultimately are used in any plant or building having a steam boiler. They are also used in building ships and locomotives.

Large-diameter pipe (20 to 36 inches O.D.) is used in main gas and oil pipe lines.

Light-walled electric welded tubing four inches and under in diameter is used in the manufacture of furniture, airplane and motor bus bodies, automobiles (seat frames, shock absorbers, tail pipes), and television aerials.

Cast-Iron Pipes and Tubes: Although cast-iron water-pipe may be cast manually or by the sandslinger method, most of it is manufactured by the Delavaud process. The Delavaud process for making pipe uses a cylindrical, horizontal, rapidly spinning steel mould into which molten metal is introduced, the molten metal being distributed over the mould wall and held there by centrifugal force. This forms a pipe of uniform wall thickness which after solidification and subsequent shrinkage of the metal, is withdrawn from the mould. The mould is flood-cooled by water on the outer surface, causing rapid solidification of the molten metal.

The mould, its bearings and drive, and a casing or jacket to contain the water cooling, are mounted on a carriage which travels on a pair of rails. The carriage is moved along its bed at a controlled uniform rate, the distance it travels being a little over twice the length of the pipe to be made. At one end of the bed is a ladle with a controllable tilting mechanism, which feeds a long, narrow trough supported only at the end under the ladle. The trough, which is a little longer than the pipe to be made, is located so that it is roughly concentric with the mould.

The pipe-making process starts with the carriage and mould (or "machine") at the lower end of its travel so that the trough is free of the mould. With rotation of the mould stopped, a sand core is fitted into the end of the mould to form the bell-end of the pipe. The mould is then started rotating at a speed of several hundred revolutions per minute, depending on the size of pipe being made, and the machine is moved to the opposite end of its travel so that the

trough extends down the interior of the mould nearly to the bell end. The ladle, previously filled with molten iron, is started tilting at a steady rate and the iron flows down the trough and into the mould. When the bell cavity is filled, the machine is moved steadily along its track so that a continuous layer of molten iron is created on the spinning mould wall. At the completion of its travel, the machine is again at its lower end, the trough is free of the mould, and a complete pipe has been made. Spinning is continued for a brief period until the pipe has solidified and cooled to about 1,500°F. and then stopped. A wedge-like tool is inserted inside the bell-end of the pipe and hooked to the machine bed, and the machine traversed to the upper end of its travel drawing the mould off the pipe. The completed pipe is rolled sideways out of the way and the machine returned to its lower end ready for another cycle.

After casting, pipe is transferred immediately to an annealing furnace where it is annealed by heating to 1,700 to 1,750° F. After cooling it is cleaned of any roughness, inspected, coated with tar by complete immersion, and tested at 500 pounds per square inch internal water pressure.

Cast iron soil pipe is made by pouring molten iron into a horizontal sand mould with a sand core. The mould is prepared in a two-part metal box called a flask. A pipe pattern is mounted on a moulding machine and the top half of the flask is placed over the pattern, filled with sand, and rammed mechanically by the moulding machine. Thus the impression of the pipe pattern is left in the sand. The process is repeated using the lower half of the flask. The core is made as follows: A hollow steel cylinder, called an arbor, is rotated mechanically while moulding sand is dropped onto it from an overhead hopper. The sand adheres to the arbor, gradually building up to the required size, the outside diameter of the resultant core being shaped by a knife as the core rotates.

The sand core is set in the bottom half of the flask. The upper half of the flask is placed over the lower half and the two halves are clamped together. Molten iron is poured into the cavity between the core and the two halves of the flask, forming a pipe having a thickness equal to the distance between the outside diameter of the core and the pattern impression in the sand mould. After the pipe has solidified, the steel arbor is removed and the mould is placed on a vibrating screen to remove excess sand. The pipe is taken from the mould, shot-blasted to remove adherent sand, and ground to remove sharp fins of metal. Finally the pipe is dipped in a protective coating to prevent rusting.

Soil pipe and fittings are the principal components of the indoor drainage system of almost every type of house and building. Soil pipe is made in five-foot lengths. The fittings, made in many shapes and sizes, are used in connecting lengths of soil pipe and in connecting branch lines to the main stack.

Iron and Steel Pipe Fittings: As indicated earlier, pipe fittings may be classified into three groups: buttwelding pipe fittings of steel or of genuine wrought iron, forged flanges, and cast fittings, the latter group being made of cast iron, malleable iron or steel. The methods used in manufacturing each of these types are indicated briefly in the following paragraphs.

Buttwelding steel pipe fittings are manufactured from seamless steel pipe. A right-angle turn, for example, is made by mounting an appropriate length of straight seamless pipe on a bar, heating the pipe to white heat, and then squeezing the hot pipe over a right-angle shoe. The hot steel then flows in such a way that a uniform wall thickness is maintained, the resultant 90 degree bend being

larger in diameter than the original straight length. Tube turns involving bends of more or less than 90 degrees are made in a similar manner by forcing lengths of hot, seamless pipe over shoes incorporating the appropriate angles. Other buttwelding fittings are made by cutting and welding operations.

Cast fittings, whether of cast-iron, malleable-iron, or steel, are made by machining rough castings to the dimensions and tolerances required. Forged flange fittings, of iron or steel, are made by machining rough forgings to the dimensions and tolerances required. Fittings are used wherever pipes are in use.

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PART II

TRENDS IN PRODUCTION AND IMPORTS

This section deals with *trends* in production and imports, from 1926 to 1956. Wherever possible, production and import data regarding the various types of pipe and tube have been related to the tariff. It has been found, however, that published data cannot always be closely related to individual tariff items. Where this is the case, attempts have been made to obtain additional breakdowns or regroupings of the statistics which are more closely related to the descriptions contained in individual items. In the following sections, each of the more important types of pipe or tube is dealt with separately.

Cast Iron Pipe (Soil and Water)

Prior to 1953, no breakdown was made as between imports of soil-pipe and water-pipe. Both types were grouped in one statistical item. In order to compare imports with domestic production prior to 1953, it is, therefore, necessary to examine statistics covering both soil- and water-pipe, as is done in the table below.

It would appear that prior to 1951, imports of cast-iron pipe usually made up considerably less than 10 p.c. of domestic disappearance of such pipe. In 1951 and subsequent years, however, imports have accounted for up to 19.0 p.c. of domestic disappearance and have not dropped below 13.6 p.c. In the same period, Canadian production has shown a considerable increase. The statistics, therefore, show that both domestic production and imports have increased substantially in recent years, imports having a somewhat greater share of the market than previously.

ALL CAST IRON PIPE

(tons of 2000 lbs.)

Year	Canadian Production	Imports	Exports	Domestic Disappearance (or Supply)	Imports as p.c. of D.D.
1926	87,949	6,702	—	94,651	7.1
1929	77,624	5,063	—	82,687	6.1
1933	11,702	534	—	12,236	4.4
1937	33,048	377	—	33,425	1.1
1941	64,237	203	1,966	62,474	.3
1946	77,487	205	157	77,535	.3
1948	116,252	5,289	659	120,882	4.4
1950	121,335	13,222	1,368	133,189	9.9
1951	131,650	20,117	999	150,768	13.3
1952	108,560	17,553	1,274	124,839	14.1
1953	130,780	27,501	445	157,836	17.4
1954	148,950	34,999	154	183,795	19.0
1955	162,725	25,406	1,086	187,045	13.6

Cast Iron Soil-Pipe

This product enters under tariff item 396*a*, with rates of Free (B.P.) and 7½ p.c. (M.F.N.). Domestic producers supply more than 90 p.c. of Canadian requirements and have experienced an almost constant growth in their output, which has increased from 29,159 tons in 1948 to well over 40,000 tons in 1954 and 1955. Import statistics, which are available after 1952, show that purchases from non-Canadian sources have tended to decrease in both absolute and relative terms. Most imported soil-pipe originates in the United Kingdom and enters the Maritime Provinces, Quebec and British Columbia.

CAST IRON SOIL-PIPE

(tons of 2000 lbs.)

Year	Canadian Production	Imports	Domestic Supply	Imports as p.c. of D.S.
1941	17,412	—	—	—
1946	16,351	—	—	—
1948	29,159	—	—	—
1950	32,700	—	—	—
1951	30,000	—	—	—
1952	37,200	—	—	—
1953	39,200	4,380	43,580	10.0
1954	45,400	3,410	48,810	7.4
1955	43,500	4,330	47,830	7.0
1956 (8 mos.)	34,000	1,768 (7 mos.)	—	—

Cast Iron Water-Pipe

Since 1953, most water-pipe has entered under tariff item 396, with rates of $5.00 per ton (B.P.) and $10.00 (M.F.N.). Imports are largely from the United Kingdom.

The market for water-pipe in Canada has expanded greatly in postwar years; this development is attributable to the rapid growth of population and the relatively great expansion of urban communities. The result has been the rapid extension of existing water systems and the introduction of many new systems. Domestic foundries have responded to this demand by increasing their output substantially, as the following table illustrates. The demand, however, has not always been consistently upward; it fell sharply in 1952 and only partially recovered in 1953. However, in 1951, 1954, 1955 and 1956, production has been well above that of the early postwar years.

In recent years, domestic foundries have supplied from 75 to 85 p.c. of the Canadian market. Although this represents a greater tonnage than previously, it is a smaller percentage than in earlier years, when the market was very much smaller. This development can also be stated in the following terms: both domestic production and imports have increased tonnagewise, with imports showing the greater increase, but still accounting for only from 15 to 25 p.c. of the supply of pipe. It would appear that imports were not responsible for the dip in domestic output in 1952, since imports in that year seem to have been smaller than in both the preceding and the following year, when domestic output was on a much higher level. The drop in 1952, therefore, seems to have been largely attributable to a decline in domestic demand.

CAST IRON WATER-PIPE

(tons of 2000 lbs.)

Year	Canadian Production	Imports	Domestic Supply	Imports as p.c. of D.S.
1941	45,793	—	—	—
1946	57,810	—	—	—
1948	87,093	—	—	—
1950	88,635	—	—	—
1951	101,650	—	—	—
1952	71,630	—	—	—
1953	91,580	23,121	114,701	20.2
1954	103,550	31,365	134,915	23.2
1955	119,225	21,076	140,301	15.0
1956 (8 mos.)	92,400	16,386 (7 mos.)	—	—

Steel Pipes and Tubes

There are many divisions and sub-divisions of steel pipes and tubes in common usage in the trade. In this sub-section, the more important broad groupings are included; these are buttweld, electric-welded, seamless, boiler tubes and seamless and electric-weld casing for oil and gas wells. The following table shows shipments by Canadian mills for all of these types except seamless pipe, which is dealt with separately:

Shipments of Steel Pipe and Tube by Canadian Producers
(tons of 2000 lbs.)

	1951	1952	1953	1954	1955
Buttweld	142,409	115,542	122,095	119,581	156,945
Electric-welded to 16 inches in diameter	83,768	134,115	91,341	98,805	166,756

Buttweld pipe is largely dutiable under tariff item 397(*a*), with rates of 15 p.c. (B.P.) and 22½ p.c. (M.F.N.). Domestic production was high in 1951, dipped in 1952, 1953 and 1954, but returned to a peak in 1955. It would appear that this fluctuation reflected changes in levels of domestic demand rather than import competition, which is relatively light, probably amounting to about 5 p.c. of domestic production.

Electric-welded pipe of 10½ inches or less in diameter also is classified under item 397(*a*). Electric-weld within this size range has composed the greater part of the tonnage of domestic production of this type of pipe. Once the newer pipe mills begin production of large diameter pipe, this relationship will change and tonnage of pipe of large diameter will almost certainly considerably exceed that of pipe in smaller sizes. Imports under 397(*a*) of electric-welded pipe 10½ inches or less in diameter do not appear to have been extensive and probably have not been a major factor in influencing the volume of business available to Canadian mills.

Electric-welded tube, which is produced to three inches in diameter in Canada, is also classifiable under 397(*a*). Imports of tubing are substantial, accounting for from 30 to 40 p.c. of total consumption in some years. In part, the reason for these heavy imports is that tubing from three to five inches in diameter is not made in Canada.

It would seem certain that sizeable tonnages of hot-finished seamless pipe are also classified under tariff item 397(*a*). The following table shows both domestic production and imports of hot-finished seamless pipe. Hot-finished seamless pipe may also be classified under item 398*c* at Free (B.P. and M.F.N.) or under item 398*d* at Free (B.P.) and 10 p.c. (M.F.N.). Information available to the Board and evidence at public hearings point to about 6,000 tons of seamless pipe (hot- or cold-finished) having been imported in 1955 under item 398*c*; in earlier years, the tonnages imported under this item were considerably smaller. A rough estimate of imports under item 398*d* is 4,000 tons annually. The remainder would enter under item 397(*a*). Domestic production is small, being considerably less than the tonnage of imports.

Cold-drawn seamless pipes or tubes fall largely under tariff items 398, 398*a*, 398*b* or 398*c*. It is understood, however, that the major proportion of imports enters under tariff item 398 at Free (B.P.) and 5 p.c. (M.F.N.) or item 398*c* at Free (B.P. and M.F.N.). Domestic production has been very small, amounting to only a fraction of imports.

SEAMLESS PIPE AND TUBE

(tons of 2000 lbs.)

Year	Domestic Production		Imports: 12 inches or under in diameter		Imports: Over 12 inches in diameter
	Cold-drawn	Hot-finished	Cold-drawn	Hot-finished	Hot-finished
1950.....	1,741	4,890	5,625	13,660	10,366
1951.....	2,458	13,706	10,463	14,302	19,839
1952.....	2,374	6,266	9,868	28,519	14,804
1953.....	802	7,584	10,800	19,728	8,747
1954.....	146	4,301	10,269	13,725	11,786
1955.....	153	5,817	10,315	16,203	4,753

Electric-welded and seamless pipe over $10\frac{1}{2}$ inches in diameter are classifiable under tariff item 397(*b*) at rates of 10 p.c. (B.P.) and 15 p.c. (M.F.N.). Drawback items 1018 and 1018*a* reduce this protection by 50 p.c. if the pipe imported is seamless over four inches in diameter or electric-welded over 16 inches in diameter, both for use in the transmission of natural gas. Domestic production has, until the present, been limited to electric-welded pipe not exceeding 16 inches in diameter. The new mill at Welland, however, will be in a position to produce pipe up to 36 inches. Production in sizes between $10\frac{1}{2}$ and 16 inches has been relatively small and subject to sharp fluctuation. The major portion of imports under this item has been in sizes not made in Canada. Imports in sizes made in Canada have amounted to from 14 p.c. to 200 p.c. of domestic output.

Boiler tubes are classified under tariff item 399 and are duty-free from all sources. Canadian production has usually been a fraction of imports and has fluctuated greatly from year to year. As a general rule, users appear to turn to Canadian production only during periods of shortage.

BOILER TUBES

(tons of 2000 lbs.)

Year	Canadian Production	Imports
1950..	4,028	7,032
1951..	3,949	12,242
1952..	3,888	17,567
1953..	573	10,349
1954..	762	8,519
1955..	1,850	9,158

Oil and gas well casing enters Canada duty-free under tariff item 848. The requirements for this product have greatly increased in recent years with the development of Canada's western oil resources. At the present time, consumption of this product accounts for a substantial portion of all the pipe and tube used in Canada. A major portion of the oil industry's requirements is imported from the United States and the United Kingdom in the form of seamless casing. In recent years, Europe and Japan have also been shipping sizeable tonnages to Canada. Canadian shipments have been negligible, although capacity is in existence which could produce substantial tonnages of casing. Only in periods of shortage has the Canadian producer, Page-Hersey, been called upon to supply. The reason for this lack of business for Page-Hersey was, according to statements made by the company's vice-President, that the company could not sell at a competitive price with duty-free entry of imports.

OIL AND GAS WELL CASINGS

(tons of 2000 lbs.)

Year	Canadian Production		Imports
	Seamless	Welded	
1950	1,037	—	33,646
1951	472	—	70,323
1952	2,993	9,377	73,212
1953	1,042	—	95,617
1954	—	—	98,583
1955	35	158	91,833
1956	8,395 (10 mos.)	1,753	103,624 (8 mos.)

Fittings and couplings of iron or steel are classifiable under tariff item 400 at rates of 20 p.c. (B.P.) and 22½ p.c. (M.F.N.). Domestic producers have supplied from 85 to nearly 95 p.c. of Canadian requirements in the years since 1950. During the last four years, imports have been consistently greater both tonnage-wise and in percentage terms, although still supplying only from 10 to 15 p.c. of the market. Canadian production has fluctuated considerably since 1950, largely because of changes in demand and, to a much lesser degree, because of greater imports: i.e., while demand fell by 10,800 tons between 1948 and 1954, imports increased by about 3,000 tons.

PIPE FITTINGS OF IRON OR STEEL

(tons of 2000 lbs.)

Year	Canadian Production	Imports	Domestic Supply	Imports as p.c. of D.S.
1926	26,000[1]	—	—	—
1929	35,230	—	—	—
1933	5,571	—	—	—
1937	16,866	—	—	—
1941	33,127	—	—	—
1946	45,371	1,716	47,087	3.6
1948	57,185	2,446	59,631	4.1
1950	53,265	3,072	56,337	5.4
1951	51,450	5,077	56,527	9.0
1952	40,970	7,229	48,199	15.0
1953	43,420	6,022	49,442	12.2
1954	43,050	5,571[1]	48,801	11.8
1955	53,569	6,311[1]	59,880	10.5

[1] Estimated from dollar figures.

The foregoing can perhaps be summarized in the following terms: Production of buttweld pipe and electric-weld pipe has far outweighed the output of all other types of pipes and tubes. The greatest volume of existing domestic production is therefore protected by rates of duty ranging from 10 to 15 p.c. (B.P.) and from 15 to 22½ p.c. (M.F.N.). While certain end-use or drawback items dilute or remove this protection overall, it appears to be largely intact for those types of pipe produced in the greatest volume. Apparently because of this fact, imports of buttweld and electric-weld pipe are relatively small, leaving the bulk of the market to domestic producers. On the other hand, Canadian producers have had a relatively minor share of the market for types of pipe which have relatively little tariff protection. Seamless pipe, boiler tubes and casing are in this category. The entry of Mannesmann may change this picture as this firm intends to specialize in seamless pipe and casing. The introduction of agreed freight charges on casing from Eastern Canadian production points to Alberta is also a new factor of definite consequence to the producers.

DISTRIBUTION OF PIPES AND TUBES

This section attempts to do two things: to show the relative magnitude of pipe and tube shipments to the various regions of Canada, and to indicate the distribution of imports on a regional basis. Such information assists in evaluating the impact of freight charges and freight differentials on the distribution of both domestic and imported products. It also affords a better perspective as to what various pricing measures, such as freight allowances, mean in terms of the volume of trade affected and the geographic distribution of such trade. This section is, therefore, closely related to later sections dealing with freight charges and prices.

The first table below indicates the percentage distribution of shipments, by domestic producers, of all steel pipes and tubes. It shows that Ontario and Quebec still comprise the largest single market, although their share decreased from 69.3 p.c. in 1952 to 60.1 p.c. in 1955. Alberta and Saskatchewan have, as is to be expected, become increasingly important users of pipe; their combined consumption increased from 14.6 p.c. in 1952 to 29.7 p.c. in 1955. British Columbia, Manitoba and the Maritime Provinces normally use less than 5 p.c. each.

Provincial Distribution of Shipments by Canadian Producers
(Provinces as p.c. of Canada total)

Year	B.C.	Alta.	Sask.	Man.	Ont.	Que.	Maritimes	Canada
1952..........	4.5	12.0	2.6	8.7	49.3	20.0	2.9	100.0
1953..........	4.6	13.2	6.1	2.9	47.5	22.8	2.9	100.0
1954..........	4.4	15.9	9.1	2.9	41.7	23.2	2.8	100.0
1955..........	4.7	17.4	12.3	2.6	38.5	21.6	2.8	100.0

In 1954 and 1955, the tonnages of imported steel pipe and tubes amounted to 130 p.c. and 50 p.c. respectively of Canadian production (imports were roughly 294,000 tons in 1954 and 163,000 in 1955). The provinces receiving the major share of these imports are British Columbia, Ontario and Alberta. British Columbia uses much more imported than domestic pipe; in Alberta also, imported pipe has greater use than Canadian, largely because of imports of casing and line pipe of large diameter. In Ontario, there has been greater usage of domestic pipe, although imports make up a very sizeable proportion of total consumption of pipe; Quebec and the Maritimes use considerably more domestic than imported pipe. It must be kept in mind that these are generalizations and vary considerably from year to year.

Provincial Distribution of Imports
(Provinces as p.c. of Canada total)

Year	B.C.	Alta.	Sask.	Man.	Ont.	Que.	Maritimes	Canada
1952..........	30.6	31.1	2.7	1.3	21.1	12.6	0.6	100.0
1953..........	27.1	29.5	5.9	8.9	20.5	7.3	0.7	100.0
1954..........	13.7	23.6	26.0	5.5	22.7	7.8	0.7	100.0
1955..........	29.7	16.3	7.0	7.2	28.0	9.8	1.9	100.0

The following data show (for domestic production and for imports) the distribution of pipes, *by types*:

Cast Iron Water-Pipe

Ontario and Quebec are by far the chief markets for water-pipe, accounting for 74.3 p.c. of total Canadian supply in 1955. The Prairies, British Columbia and the Maritimes used 11.8 p.c., 8.5 p.c., and 5.5 p.c., respectively, in 1955, as shown in the table:

Regional Supplies as Percent of Total Canadian Supply

Year	B.C.	Prairies	Ont.	Que.	Maritimes	Canada
1954...........	16.6	9.3	40.2	28.0	5.9	100.0
1955...........	8.4	11.8	45.9	28.4	5.5	100.0

Imports of cast iron water-pipe in 1955 amounted to 21,076 tons, or about 15 p.c. of domestic production of 119,225 tons in the same year. The largest tonnages of imports entered Quebec, British Columbia and Ontario, in the order named. Imports formed the major proportion of provincial supply in those provinces on the two coasts, namely in British Columbia, Nova Scotia and Newfoundland. However, something less than 50 p.c. of total imports entered these provinces. Because of the limited size of the pipe demand in such areas, imports usually made up better than half of total local supplies.

In 1955, more than half the total tonnage of imported water-pipe entered Quebec and Ontario. The size of these markets was such, however, that imports accounted for 10.7 p.c. of total supplies in Quebec and only 1.9 p.c. in Ontario. From the point of view of imports, nevertheless, these provinces obtained equal or greater tonnages of pipe from abroad than all the rest of Canada.

The table following shows the percentage of regional markets held by imports in 1954 and 1955:

Imports as Percent of Total Supply

Year	B.C.	Prairies	Ont.	Que.	N.B.	N.S.	Nfld.	Canada
1954...........	94.1	0.9	4.6	8.9	18.4	88.6	93.7	24.0
1955...........	84.4	—	1.9	10.7	20.0	59.3	68.3	13.7

Cast Iron Soil-Pipe

As is to be expected, the two central provinces provide almost 60 p.c. of the market for all soil-pipe in Canada; British Columbia and Alberta are also important users, but on a smaller scale. Distribution figures are available for the larger producers and these show the following market division—by provinces, as percentages of the Canadian total in 1955:

B.C.	Prairies	Ont.	Que.	Maritimes
11.9	22.8	40.7	18.6	6.0

Imports have been small, 4,330 tons in 1955, amounting to 9 p.c. of domestic supply. Quebec usually has taken half of total imports, with British Columbia taking about one-quarter. The tonnages entering Ontario and the Prairies from abroad have been very small.

Steel Pipe and Tubes

The following data are based on distribution breakdowns for 1955:

More than 70 p.c. of domestic production of buttweld pipe is used in Ontario and Quebec. Alberta uses well over 10 p.c., the remainder being fairly evenly distributed among the other larger provinces. Separate import statistics for this type of pipe are not available; it has been estimated that these amount to a very small percentage of domestic output.

Electric-welded pipe and tubing in small sizes, four and one-half inches and under in diameter, are marketed chiefly in Ontario and Quebec, where

78 p.c. of domestic production was sold in 1955. The Prairie Provinces provided the second largest consuming area, taking 16 p.c. of Canadian output. Imports of tubes are substantial under end-use items and since most of the beneficiaries of such tariff items have their plants in Ontario, it is only logical to believe that a fair proportion of the imports enter Ontario. Imports are not sufficiently sub-divided to confirm this assumption or the probability that sizeable tonnages of tubing have entered Alberta for use in the oil country.

The distribution pattern for medium-sized pipe, four and one-half inches to 16 inches, is largely tied in with western oil developments, since much of this pipe is used in gathering and distribution lines. In 1955, the distribution of domestic-produced pipe of medium diameter shows that something better than 50 p.c. went to the Prairies, much of the remainder having been supplied to Ontario and Quebec. British Columbia and the Maritime Provinces used relatively little medium-sized pipe of domestic manufacture.

Oil and gas well casing is, of course, marketed almost entirely in western Canada.

The small domestic production of pressure (boiler) tubes is marketed almost exclusively in central Canada. The great bulk of imports, which are many times greater than domestic production, enters Quebec and Ontario; smaller quantities find their way to the Maritimes, the Prairies and British Columbia.

Seamless pipe, other than boiler tubes and oil-country goods, is consumed almost entirely in Ontario and Quebec, only very small tonnages being used in other regions.

The foregoing has shown that for the following types of pipe, the major Canadian market is in Ontario and Quebec: cast iron water- and soil-pipe, buttweld, electric-weld four and one half inches or under, boiler and seamless. Because of this concentration, Canadian producers have freight advantages on these types of pipe in approximately 75 p.c. of the total market. Similarly, while Canadian consumption of oil-country goods is at a considerable distance from Canadian points of production, the recent introduction of agreed freight charges has changed a definite freight disadvantage to one of considerable advantage. The large market for medium diameter pipe of from four and one-half to 16 inches is also in western Canada and, in the absence of agreed charges, adverse freight differentials are a considerable handicap to Canadian producers.

FREIGHT RATES ON PIPES AND TUBES

Freight charges are an important factor in determining the competitive position of domestic pipe and tube producers in Canadian markets. The producer who is closer to a particular market, or who has the benefit of a lower freight rate than his competitors, has an advantage which may be very considerable, as freight costs are often substantial in relation to the f.o.b. factory price of pipes or tubes. Conversely, where the producer is at a considerable distance from a given market, he is likely to find that freight charges on products such as pipes and tubes make it difficult or even impossible to compete with producers who are closer to the market or who have access to more favourable freight rates. This section shows in general terms the freight rates which apply from the main production points in Canada, the United States and overseas to the principal Canadian markets for pipes and tubes. From these it is possible to assess the advantages or disadvantages facing Canadian producers as a consequence of transportation costs. The rates used are those in force on September 1, 1956, which take into account the interim

increases effective on July 3, 1956. The application of the railways for a 15 p.c. increase in rates above the levels in force prior to July 3, 1956, was pending before the Board of Transport Commissioners at the time of preparation of this Report.

Rates are provided for each of the more important types of pipes and tubes, as follows: electric-welded tubes, welded and seamless pipe, cast iron soil-pipe and fittings, cast iron water-pipe and fittings, and pipe fittings of iron or steel. The descriptive material of this section is also sub-divided under these headings since the factors relating to the trade in the various types of pipe differ and must be examined separately.

In the following text the term *"freight differential"* refers to the *difference* in freight costs to any given market from a Canadian mill, as compared with those from a non-Canadian mill. In all cases, the *lowest* Canadian freight charge, allowing for seasonal adjustments, is compared with the *lowest* charge for laying down non-Canadian pipes or tubes. An "adverse" or "unfavourable" differential is the amount by which freight costs from a Canadian mill exceed those from a non-Canadian mill; a "favourable" differential is the opposite of the above. It must, of course, be kept in mind that the freight charges to any stated point will differ from mill to mill, unless two mills are located in close proximity. It has been thought logical, however, to calculate differentials on the basis of freight from the nearest mill, provided it has the capacity to produce tonnages which have some relationship to the requirements of a region. If there is doubt on this point, the freight costs for a number of mills are considered.

The term "agreed charge" refers to rates agreed to by the shippers and the railways. One of the provisions of such agreements is that the shipper will send a stipulated proportion of his business by rail.

Electric-Welded Tubes

The great bulk of Canadian-produced tubes is made at Welland and Woodstock, by Page-Hersey and Standard Tube and T.I. respectively; several smaller producers are also located in central Ontario. It would appear that all these producers gain more from freight differentials in their chief markets than they lose. For example, the domestic mills enjoy freight advantages over non-Canadian competitors in Ontario, where consumption is considerably more than half of the total for Canada. At Toronto, Page-Hersey has an advantage of 14 cents per 100 pounds over the nearest United States source; Standard Tube's advantage is less, being three cents. The one notable exception where Canadian producers are at a disadvantage in Ontario (as they are in basic steel) is the Windsor area. Page-Hersey also has an advantage (20 cents per 100 pounds) in the important consuming area in and around Montreal vis-a-vis United Kingdom; Standard Tube, at a somewhat greater distance from Montreal, is at a freight disadvantage of about 11 cents. At practically all points east of Montreal, Canadian producers are at a disadvantage freightwise with overseas competitors; consumption in such regions is relatively light.

West of Winnipeg, freight charges tend to place the domestic producers at something of a disadvantage, although the adverse differentials are often small. At Calgary, for example, Page-Hersey is faced with an unfavourable differential of about five cents per 100 pounds in the summer and 12 cents in the winter. Agreed charges from Welland to Vancouver give Page-Hersey an advantage of 70 cents over United States competitors located in Chicago, but a disadvantage of about 25 cents vis-a-vis United Kingdom.

Welded and Seamless Steel Pipe

The larger Canadian producers of electric-welded pipe are located at Welland and Port Moody, B.C. A new mill at Edmonton and a second plant at Welland, to produce large diameter pipe, are scheduled to begin production in the near future. Buttweld pipe is made in Montreal and Welland. Seamless steel pipe is made at Welland and a second mill, Mannesmann Tubes, is nearing completion at Sault Ste. Marie.

For small diameter pipe (four inches and under) the Montreal mills are on approximately equal terms with overseas suppliers in most of the Maritime Provinces. These Montreal mills have very great advantages over both foreign and other domestic mills in selling in Montreal and the rest of Quebec Province, which is an important user of pipe. At Quebec City, the differential in their favour is approximately 46 cents per 100 pounds in relation to imports; at Montreal, it is 73 cents against imports and 54 cents against Page-Hersey at Welland. Similarly, in Ontario (which together with Quebec uses more than 75 p.c. of Canadian consumption of smaller diameter pipe) Page-Hersey has substantial differentials in its favour. At Toronto, the advantage amounts to 47 cents per 100 pounds, while in Hamilton it is even greater. The Montreal mills enjoy favourable freight differentials into eastern Ontario and at least as far west as Toronto as regards imports. In Manitoba, Page-Hersey is on fairly equal terms with United States mills but in the other prairie provinces it faces unfavourable freight differentials. The western market, however, is also served by Canadian Western Pipe Mills, Limited, at Port Moody, British Columbia; this producer has an advantage of almost 90 cents at Vancouver and even greater advantages in Alberta.

Pipe over four inches is at present made only by Page-Hersey at Welland. The new mills—Welland Tubes; Mannesmann at Sault Ste. Marie; and Alberta Phoenix at Edmonton—will also produce pipe in larger sizes. All these mills are at a freight disadvantage in Quebec City and more easterly points, vis-a-vis overseas competition. At Quebec City the unfavourable differential for Page-Hersey is 25 cents per 100 pounds; this difference also holds true for many points in the Maritime Provinces. Consumption of medium diameter pipe is small in eastern Canada. In the Montreal area and in all of Ontario, Page-Hersey derives freight advantages; at Toronto such advantage amounts to 53 cents. In certain recent years, Ontario and Quebec have provided a market for about one-quarter of total Canadian consumption of pipes between four and one-half and 16 inches in diameter. At Winnipeg, Page-Hersey is on equal terms with suppliers in the United States but further west this firm is at a disadvantage of 7 cents at Regina, up to 40 cents at Edmonton, and 27 cents at Vancouver. The new mill in Edmonton will, of course, have a freight advantage in prairie markets, but it will be faced with relatively high freight charges on its raw material, skelp. The prairie provinces account for more than 50 p.c. of all pipe from four and one-half to 16 inches used in Canada.

Oil well casing and tubing are used almost exclusively in the west and are now subject to agreed charges. As a consequence, the freight charges from Welland and Sault Ste. Marie, the two producing points, are much below those from competing mills in the United States. It would appear that Page-Hersey has an advantage of $1.16 per 100 pounds at Calgary and $1.36 at Edmonton. Mannesmann, apparently, will have an even greater advantage amounting to $1.38 at Calgary and $1.58 at Edmonton. These comparisons are based on Lorain as the United States point of supply.

It is important to note that the observations in the preceding paragraph apply only to oil-country goods of United States origin. A very different situation, however, apparently will prevail as regards oil-country goods arriving at

west coast ports from overseas. When this report was ready for the printer, the Tariff Board learned that Canadian Western Pipe Mills Limited, Port Moody, B.C., and the Canadian Pacific Railway had completed an arrangement on December 6, 1956, whereby agreed charges on oil-country goods became effective on December 27, 1956, between Port Moody and points in British Columbia, Alberta, Saskatchewan and Manitoba. These agreed charges are much lower than the rates previously in force; for example, the new rates from Port Moody will be 60 cents to Calgary, 69 cents to Edmonton and 102 cents per 100 lbs. to Estevan. In January 1956 Canadian Western Pipe Mills will begin limited production of oil-country goods; in addition, the company will import from overseas. Ocean freight rates from Europe to Vancouver for pipe have been in the neighbourhood of $1.00 per 100 lbs., thus overall freight from Europe would be approximately $1.60 to Calgary and $1.69 to Edmonton. This compares with Mannesmann's rate from Sault Ste. Marie of $1.39 to both points. The significance of these new rates becomes obvious from the statistics of recent importations of casing, by *sources*:

Source	1955	1956 (8 months)
United States	37,660 tons	44,062 tons
United Kingdom	10,607	11,375
Germany	4,009	5,183
Belgium	875	727
Czechoslovakia	—	352
France	11,130	6,261
Hungary	—	169
Japan	23,061	30,586
Italy	4,491	4,909
Total	91,833	103,624

The statistics show that something less than half of total imports are from the United States; the greater part originates from overseas sources. The new agreed charges at present apply only to shipments from overseas which pass through the hands of Canadian Western Pipe Mills at Port Moody; the favourable freight advantage of eastern Canadian producers will be relatively slight in relation to such shipments.

Cast Iron Soil-Pipe

Domestic foundries casting iron soil-pipe are located in Quebec, Ontario, Manitoba, Alberta and British Columbia. As a consequence, the only region in Canada where the industry, as such, does not have a freight advantage is the Maritime Provinces. In other parts of Canada, each foundry has an advantage in its own region over other foundries, whether they be Canadian or non-Canadian. At Montreal, local producers have an advantage of 73 cents per 100 pounds over the United Kingdom, which is the closest non-Canadian source in terms of freight charges; at Toronto the advantage for local foundries over Buffalo runs as high as 52 cents. At Winnipeg, Anthes-Imperial has a considerable advantage over non-Canadian competitors. This firm also operates a foundry at Edmonton where its local advantage is substantial. At Vancouver, Associated Foundry has an advantage of around 84 cents over ocean borne soil-pipe from the United Kingdom.

Cast Iron Water-Pipe

Canadian producers of cast iron water-pipe, located at Trois Rivieres, Toronto and Winnipeg, enjoy freight advantages in all of Canada except parts of Alberta, British Columbia and certain areas of the Maritime Provinces. In

most other regions the favourable freight differential is substantial; for example, at Montreal it is 50 cents per 100 pounds. In British Columbia, ocean-transported pipe from the United Kingdom has an advantage in excess of 25 cents, which accounts for the fact that more than 50 p.c. of imported pipe enters British Columbia.

Pipe Fittings

Pipe fittings may be made from cast or malleable iron, from cast steel, or from steel pipe. No distinction between these types of fittings is made in the freight rate structure. If fittings are shipped with a consignment of pipe, the freight rate applying to the pipe will also apply to the fittings. In instances where the fittings alone are shipped, they may be subject to rates distinct from those applying to pipe. Canadian fitting manufacturers apparently have freight advantages in practically all of Canada, with the possible exception of Vancouver. At Montreal and Toronto, two of the largest consuming centres, the advantages amount to $1.06 and $0.90 per 100 pounds, respectively, over United States mills.

COSTS OF STEEL FOR PIPE- OR TUBE-MAKING

The raw material for the production of buttweld or electric-weld steel pipes or tubes is a flat-rolled steel product known to the trade as "skelp"; this may be strip-skelp, sheet-skelp or plate-skelp, depending upon the type and size of pipe or tube to be produced. The material used by the seamless pipe or tube producer is a billet or so-called tube round. Either raw material entering a steel pipe or tube plant requires only reheating before being worked.

The cast-iron pipe producer, on the other hand, melts foundry pig iron and cast-iron scrap to obtain a metal for casting.

There are three skelp producers in Canada—Algoma Steel Corporation Limited, producing skelp in widths ranging from 4 inches to 25 inches for the production of pipes or tubes in sizes ½-inch to 7-inch O.D.; Dominion Foundries and Steel Limited and The Steel Company of Canada Limited, both producing skelp in widths ranging from 18 inches to 51 inches for the production of pipe in sizes 5-inch to 16-inch O.D.

Canadian pipe and tube makers buy their skelp from these domestic sources at a lower laid-down price than that at which it can be secured from United States or other non-Canadian skelp producers. Prices of United States skelp delivered to Canadian pipe mills are higher because of the 5 p.c. duty and the freight disadvantage. At Welland, for example, skelp suppliers in both Hamilton and Sault Ste. Marie have a freight advantage over Youngstown, the chief United States supplying point. Some of the newer pipe mills, however, have found that there is not sufficient skelp production to meet their requirements and others believe that an imported Bessemer skelp is more useful for their purposes to date. On balance, nevertheless, only a small proportion of total Canadian skelp requirements comes from non-Canadian sources.

While Canadian pipe producers find it advisable on a price basis to buy from Canadian skelp sources, they are at a distinct disadvantage vis-a-vis their United States and, presumably, their United Kingdom competition when it comes to comparative cost of raw material. Most United States pipe producers competing in the Canadian market are integrated; they produce their own skelp or obtain it from associated or affiliated companies that are very close to their scene of operations. The one notable exception is the A. O. Smith Corporation in Milwaukee, buying its skelp from independent sources in Chicago.

Apart from the cost of skelp as a product, this integration certainly represents savings in freight charges. In contrast with National Tube at Lorain, Ohio, which produces its own skelp, Page Hersey, for example, in buying from Sault Ste. Marie, faces a freight haul that lands its raw material at its plant somewhere around 7 p.c. higher than the price paid by National Tube (assuming that skelp is charged into the National Tube pipe mill at prevailing open market United States price). For that portion of its skelp purchased from Youngstown, Page-Hersey's skelp cost is about 11 p.c. higher, including duty. Montreal pipe mills have a landed cost from their Canadian source that is approximately 8 p.c. higher than that of their United States competitors; and from Youngstown, a landed cost approximately 14 p.c. higher, including duty. Canadian Western Pipe Mills at Port Moody, B.C., has a landed cost from its Canadian source (which supplies by far the greater part of its requirements) that is about 22 p.c. higher than that of United States pipe mills, and a landed cost from Germany that is about 40 p.c. higher. Alberta Phoenix at Edmonton is at present buying the greater part of its skelp requirements from United States sources and has a landed cost from Detroit that is about 43 p.c. higher than the price paid by its United States competitors; on skelp from Sault Ste. Marie its cost would be about 32 p.c. higher.

Skelp costs represent about 65 p.c. of the cost of producing pipe.

While most pipe mills in the United States are integrated and have their skelp supplies close to their pipe mills, the same is not true of tube producers in that country, who buy on the open market; in this respect, tube producers in Canada and the United States are in much the same position.

Page-Hersey has been the only Canadian producer making seamless tubular products, and hence the only user of billets. Although Standard Tube undertakes certain finishing operations on seamless tubes it does not begin at the billet stage. Page-Hersey obtains its billets mainly from Canadian sources whose mill price is slightly higher than the United States price at the mill. In addition, freight charges for the Canadian pipe producer range from \$1.40 to \$4.70 per ton whereas United States pipe producers are integrated with steel producers.

The plant that Mannesmann is building at Sault Ste. Marie is located on a site adjacent to the plant of Algoma Steel. Mannesmann will obtain its billets or tube rounds from Algoma production.

Competition for Canadian cast-iron pipe producers comes mainly from United Kingdom sources. Raw material costs for the Canadian producer are much higher than those for the United Kingdom producer, the most pronounced disadvantage being in respect of scrap, although Canadian pig iron costs are also higher. On scrap, Canadian costs are apparently more than 100 p.c. greater than United Kingdom costs while on pig iron they are more than 25 p.c. greater.

The ratio of pig iron to scrap in the cupola charge varies in keeping with the pricing of each. In Canadian practice the ratio has ranged from 30/40 p.c. pig iron to 60/70 p.c. scrap. Cast-iron scrap commands a premium price.

PRICING OF PIPES AND TUBES

In the following study, comparisons have been limited to one size and one weight of any one type of pipe or tube. The size and weight is usually one of the more popular, and the pricing is generally representative of the spread between Canadian and non-Canadian products.

The bases of comparison have been the f.o.b. mill price and the delivered base price of similar quantities under the same conditions of sale to the same class of trade. Except where otherwise noted, the f.o.b. mill price is a "base"

price excluding extras or deductions; extras or deductions are somewhat similar in both Canadian and United States practice and in the interests of simplification can usually be eliminated. To these f.o.b. mill or base prices there has been the addition of full freight charges, to develop a "delivered base" price for purposes of comparison at given destinations. The freight charges used are those from the nearest non-Canadian mill (or warehouse) to a given destination, and those from the most important Canadian mill to the same destination.

The price information used in this section has been obtained from a wide variety of sources, and checked and re-checked wherever possible. Unless otherwise noted, the pricing is current as of September 1st, 1956. No adjustments have been made for exchange differentials; dollars were taken as at par and the pound sterling at $2.80.

Buttweld or Continuous Weld Pipe: The comparison was based on 1-inch standard black pipe, threaded and coupled (standard couplings), weighing 1.684 lbs. per foot, shipped in carload lots and sold to wholesale distributors.

Buttweld pipe is produced by Dosco, Page-Hersey and Stelco, all three of which have the same f.o.b. mill price, the same f.o.b. points, and the same freight equalization policy. Their f.o.b. mill price is approximately 20 p.c. higher than that of United States mills competing in Central and Eastern Canada. Pipe from these United States sources entering Canada under tariff item 397(a) faces a 22½ p.c. rate of duty and is at a freight disadvantage (as a percentage of its f.o.b. price) that amounts to around 13 p.c. at Montreal and 6 p.c. at Toronto. At such pricing, very little United States buttweld pipe is imported into the Central Canadian market—by far the most important area for the sale of buttweld or so-called plumbers' pipe. Another factor serving to further increase the differential between Canadian and United States pipe is the existence of internal freight equalization as a consequence of domestic competition. Internal domestic competition and competition from United Kingdom sources create a condition where domestic producers cannot take full advantage of the M.F.N. tariff under 397(a).

With regard to United Kingdom competition, Canadian f.o.b. mill prices are about 50 p.c. higher than the United Kingdom f.o.b. export port prices. The freight advantage held by Canadian mills, amounting to about 11 p.c. (of f.o.b. export price) at Montreal and 4 p.c. at Vancouver, plus, in each case, duty under 397(a) of 15 p.c., still permits the United Kingdom product to land at a lower price than the Canadian. However, United Kingdom products normally enter Canadian warehouse and by the time handling, warehouse charges, and mark-up are added, the pipe sells for something close to the prevailing Canadian market price.

Seamless Pipe: In this instance the pipe chosen for comparison was 2-inch, black, standard weight seamless pipe (3.678 lbs. per foot), threaded and coupled, random lengths, shipped in carload lots and sold to wholesale distributors.

Page-Hersey at present is the only producer of seamless pipe in Canada, and its f.o.b. mill prices are approximately 21 p.c. above those of United States mills. With no internal domestic competition, Page-Hersey has been in a position to take full advantage of the tariff plus its freight advantages.

United States mills competing in Canada face a duty of 22½ p.c. under tariff item 397(a), and have a freight disadvantage that amounts to about 5 p.c. at Montreal and Toronto. In shipping into Winnipeg and other Western centres in the Prairies, the nearest United States mill has a small freight advantage.

United Kingdom seamless pipe laid down in Vancouver at a diverted price competes as far inland as Edmonton. A diverted price involves direct movement from the docks to the customer without the pipe entering a Canadian warehouse. When warehoused, the pipe becomes slightly more costly.

The Canadian producer has retained the greater part of the market for seamless pipe classifiable under tariff item 397(a). However, other items provide for free entry or low rates of duty and when pipe is admissible thereunder the Canadian producer apparently cannot compete in price.

Cast-Iron Soil-Pipe: Comparisons were based on 3-inch, single hub, medium weight, cast-iron soil-pipe sold in carload lots. While there are many foundries throughout the country producing soil-pipe, the two chief producers—Warden King with its plant in Montreal, and Anthes-Imperial with plants in St. Catharines, Winnipeg and Edmonton—were chosen for price comparison with imported products.

Both Warden King and Anthes-Imperial have varying price lists depending upon the section of the country to which shipment is made. In effect, such pricing is designed to meet both domestic and import competition, net realization at the plant varying with the degree and intensity of such competition. The average net realization (i.e. average f.o.b. mill price) to Warden King on all its sales was approximately 45 p.c. higher than the United Kingdom f.o.b. export port price. The average net realization of Anthes-Imperial was approximately 55 p.c. higher than United Kingdom f.o.b. export port price. The United Kingdom is the only source supplying soil pipe to Canada in sizes that are made by Canadian producers.

Handling, warehouse and jobber mark-up eat into the price advantage that United Kingdom soil-pipe has f.o.b. wharf, Canadian port. During the course of 1956, no United Kingdom soil-pipe was sold in Toronto or Edmonton, sales being confined to ocean ports such as Halifax, Montreal and Vancouver.

Cast-Iron Pressure Pipe: Comparisons of price in connection with pressure-pipe relate to a number of actual transactions; at the time of writing no other data were available. Canada Iron Foundries with plants at Trois Rivieres and Toronto is the only Canadian supplier of the central market; the company also sells on the East and West Coasts. Anthes-Imperial, with its plant at Winnipeg, sells in Manitoba, Saskatchewan and part of Alberta. United Kingdom sources provide competition at those points to which their product can be carried by ocean vessel. At Vancouver, United Kingdom price f.o.b. trucks for 6-inch bell and spigot cast-iron pressure-pipe was 7 p.c. lower than the Canadian price; at Montreal, for 6-inch mechanical joint, approximately 8 p.c. lower; at Quebec City, for 6-inch mechanical joint, approximately 11 p.c. lower; at Halifax, for 6-inch mechanical joint, approximately 21 p.c. lower. Mechanical joint pipe constitutes approximately 80 p.c. of total cast-iron pressure-pipe sold in the Canadian market. The two Canadian companies and their United Kingdom competitors have differing types of mechanical joint and differing costs of production. However the products serve the same purpose, are therefore competitive, and must be compared on a price basis. Cast-iron pressure-pipe imports come mainly from the United Kingdom.

Electric-Resistance Weld Pipe: Comparisons were based on 10-inch standard black pipe with a weight of 40.48 lbs. per foot, plain or bevelled ends, shipped in random lengths, carload lots and sold to wholesale distributors (tariff item 397(*a*)). A comparison was also made on 12-inch pipe admissible under tariff item 397(*b*).

Page-Hersey is the only Canadian producer at present of larger-sized electric-resistance weld pipe. On the 10-inch size, its f.o.b. mill price is

about 21 p.c. higher than that of eastern United States mills, which face a duty of $22\frac{1}{2}$ p.c. under item 397(*a*) plus a freight disadvantage of roughly 6 p.c. at Toronto. On shipments to Winnipeg, the freight position is roughly equal but the Canadian producer absorbs freight to the extent of 40 cents per hundredweight.

On the 12-inch size, the f.o.b. mill price of Page-Hersey is about 13 p.c. higher than that of eastern United States mills. United States mills competing in Toronto face a 15 p.c. duty plus freight disadvantage of roughly 6 p.c. On sales in western markets Page-Hersey absorbs freight to the extent of 40 cents per hundredweight.

Electric-Weld Mechanical Steel Tubing: The item chosen for comparison was 1-inch, 16-gauge, .65 lbs. per foot, SAE 1010 round tubing, flash-in-grade, in random lengths of 10 feet to 24 feet inclusive, shipped in quantities of 20,000 to 30,000 feet or pounds.

Standard Tube and T.I. Limited, of Woodstock, produces by far the largest amount of electric-weld mechanical steel tubing in Canada. Its f.o.b. mill price is about 6 p.c. lower than the counterpart price of United States mills or warehouses close to the Canadian border. The counterpart price used for comparison is a base price plus extras and deductions to obtain length, quantity and grade comparable to Standard's published price. Starting with a lower f.o.b. mill price, Standard has a very decided advantage over import competition that faces a $22\frac{1}{2}$ p.c. duty under tariff item 397(*a*). As a consequence of such pricing differential, there is almost no electric-weld mechanical steel tubing imported under that item. Non-Canadian products are in a position to compete where admissible under end-use tariff items, especially where they have small freight advantages in such centres as Montreal and Windsor. Such imports as do enter under these tariff items usually move direct to the customer rather than through a Canadian warehouse.

The present pricing policy followed by Standard Tube is apparently an attempt to develop and retain the Canadian market, the tariff being used solely as a deterrent to imports but not with a view to increasing Standard's own price.

Electric-Weld Pressure Steel Tubing: Comparisons were based on 2-inch electric-weld pressure steel tubing produced to ASTM specification A-178 in a weight of 2.76 lbs. per foot, with a wall thickness of .120, shipped in random lengths of 10 to 24 feet inclusive and in quantities of 40,000 pounds or feet or more.

The chief producer in the line is Standard Tube and T.I. Limited, of Woodstock, with f.o.b. mill prices roughly equal to those in the United States. Page-Hersey is also a supplier. Competition at given Canadian destinations becomes a matter of freight advantage or disadvantage, since pressure steel tubing is admissible free of duty under tariff item 399. At Montreal, Standard Tube's price is about 1.5 p.c. higher than United States delivered prices; at Toronto, .5 p.c. higher; at Windsor, 2.9 p.c. higher; and in the west equal to, or slightly less than, the price of imports from the United States.

The strongest competition facing Canadian producers is apparently that provided by United Kingdom mills. At Montreal and Vancouver, Standard's price is about 19 p.c. higher than the c.i.f. price of imports from the United Kingdom.

Oil-Well Casing (Seamless and Welded): Comparisons were based on $5\frac{1}{2}$-inch O.D. black seamless oil-well casing, $15\frac{1}{2}$ lbs. per foot, grade J.55, produced to API standard 5A, with short couplings, shipped in carload lots.

Page-Hersey, in the Fall of 1956, did not have a price list for seamless oil-well casing. However, its f.o.b. mill price as of July, 1956, had been approxi-

mately 30 p.c. higher than that of United States mills. These latter face a freight disadvantage, based upon Lorain, Ohio, amounting to about 13 p.c. at Calgary and 15 p.c. at Edmonton but were still able to land their product at these destinations at a much lower price than that of the Canadian company.

During the second quarter of 1957, according to its announced plans, seamless oil-well casing will be produced and shipped by Mannesmann Tube Co. Ltd. from its plant at Sault Ste. Marie, at prices predicated upon meeting import competition. The company has a very definite freight advantage which will provide it with a higher net realization at mill than that enjoyed by United States mills on sales in Canada. Mannesmann is quoting only on volume sizes, weights, and grades, and will not be producing a full range until sometime in 1958.

For the first quarter of 1957, Page-Hersey is quoting on welded oil-well casing to the specifications and under the conditions noted in the preamble to this section—volume sizes, weights and grades only. In such quotations the company's f.o.b. mill price appears to be about 30 p.c. higher than the f.o.b. mill price of competing United States mills, and despite a sizable freight advantage, will have a higher delivered price than the imported product.

United Kingdom prices of seamless oil-well casing, delivered, fall somewhere between United States/Mannesmann and Page-Hersey delivered prices. Japanese prices apparently have been much higher than those of Page-Hersey, both having booked business on the basis of ability to supply during periods of shortage.

Oil-Well Tubing: Comparisons were based on seamless oil-well tubing $2\frac{3}{8}$-inch O.D., 4.70 lbs. per foot, black, upset, to API standard 5A, grade J.55, in carload lots.

The only Canadian producer of such tubing at present is Page-Hersey whose f.o.b. mill prices are about 20 p.c. higher than those of United States mills. The company's freight advantage of roughly 10 p.c. brings its landed price at western points to somewhere around 8 p.c. above that of imports from the United States. Page-Hersey's prices are slightly higher than those of United Kingdom producers.

PART III

"OIL-COUNTRY GOODS"

The term "oil-country goods" is generally recognized as meaning oil well casing, tubing and drill pipe, as installed and used below the wellhead. In other words, the phrase oil-country goods covers "down-hole" tubular products.

"Drill pipe" is that pipe which is used in drilling for oil. It is usually made from cold-drawn carbon or alloy seamless steel tubing. This pipe, which is withdrawn when drilling is completed, is made to strict specifications and fine tolerances, is subjected to severe strain in drilling operations, and is used in many sizes.

"Casing" is that pipe which is inserted into the hole and serves as the "lining" of the well. Its chief functions are to keep the earth from falling into the well and also as a protection against "blow-outs" in areas where high pressures are encountered. Casing is therefore made to strict specifications, which stipulate the amount of pressure which each type must be able to withstand.

"Tubing" is inserted inside the casing and serves as the channel for conveying the oil or gas to the surface, under pressure.

Most oil-country goods are made to specifications drawn up by the American Petroleum Institute, commonly referred to as the API. The API membership embraces both producers and users, who jointly draw up the various specifications applying to each type of oil-country goods. These specifications are published by the API in a series of reference handbooks, where they are set forth in great detail. Under the API code, a producer's plant is inspected and if the production methods employed meet the required standards the plant is certified as an approved producer. It is understood that for most of the casing used, the API standards are accepted by the users without reservation and that they set their own specifications only for certain types of casing which are used in relatively small quantities, e.g., certain types of deep-well casing. This statement must be qualified, however, in the light of the users' overriding preference for *seamless* tubing and casing: this aspect of casing standards is dealt with in the following material.

Types and Sizes:

As mentioned above, drill pipe is made and used in many sizes and must meet most exacting specifications.

Casing is made in a number of grades, each of which in turn is further sub-divided by sizes and weights. The most commonly used grades of casing are known in the trade as J.55 and H.40. Lesser quantities of N.80 and P.110 are also used. The symbols designate grades of casing having various strengths; it is, of course, necessary to use progressively stronger casing as a hole increases in depth. H.40 is sometimes known as "surface string" and may be used for lining the first 600 feet of a well; it has a yield strength of 40,000 pounds per square inch. Further down the hole, J.55 is used to considerable depths (the wall thickness increases with depth) and the yield strength of J.55 is 55,000 pounds per square inch. In very deep holes, it is necessary to utilize casing of great strength, such as N.80 and P.110; these grades have yield strengths of 80,000 pounds and 110,000 pounds respectively. The added strength results from heat-treating or, in some instances, from the use of nickel-alloyed steel.

By far the greatest consumption of casing is in grade J.55, which is estimated by users to account for approximately 90 p.c. of the total used. The remaining 10 p.c. largely consists of H.40, N.80 and P.110.

A number of sizes are usually made in each grade of casing, particularly in the case of J.55. As a general rule, Canadian requirements are for casing from $4\frac{1}{2}$ inches OD to $13\frac{3}{8}$ inches OD. The heaviest demand, however, is for $5\frac{1}{2}$-inch, 7-inch and $10\frac{3}{4}$-inch casing. The following have been suggested to the Board as being representative of casing and tubing requirements:

(a) 3500 ft. well—12 tons of $10\frac{3}{4}$ inch; 40 tons of 7 inch; 12 tons of tubing; total, 64 tons;

(b) 4500 ft. well—12 tons of $10\frac{3}{4}$ inch; 51 tons of 7 inch; 15 tons of tubing; total 78 tons.

By far the greater part of the tubing used in North America at present is seamless,—because, the users say, this type has the strength to resist "whipping" and other stresses.

Casing is manufactured by the electric-resistance welding process and by various seamless methods, as outlined previously. Both electric-weld and seamless casing fully qualify under the API requirements. In spite of this, there is a considerable difference of opinion between the users of casing and the manufacturers of welded casing with respect to the merits of seamless casing versus welded casing. The manufacturers of welded casing point to the fact that their casing meets all the API standards and has, they believe, a very good record in actual usage. At the public hearings before the Board, expert witnesses apparently were not in a position to submit concrete evidence to disprove these statements. In spite of this, the users appear to have an overwhelming preference for seamless casing and usually will use the welded only when they cannot obtain seamless. In support of this position, representatives of the Canadian Petroleum Association (C.P.A.)—which represents 97 p.c. of companies in Canada engaged in the exploration, drilling, production and supply of petroleum products —made the following statement at the public hearing:

"We certainly cannot subscribe to the suggestions made by Page-Hersey, Standard Tube and T.I. Ltd. or Atlas Steels Ltd., that welded and seamless line pipe or oil-country tubular goods are comparable for our purposes. In our view, and for our purposes, seamless tubing or casing is much superior to the others. Our experience has been that there is less trouble with seamless, either in bending, breaking or splitting . . . . The reason for taking exception to this statement (by the above-mentioned producers) is that an electric-welded tube or pipe is not completely homogeneous as (it is) in the seamless process of manufacture, hence the possibility occurs of having an imperfect or non-homogeneous metallurgic condition which is susceptible to failure . . . . Some of the problems are high internal and external pressures, tension, compression, torque and susceptibility to acid gases. If the electric-welded pipe is completely normalized and stress relieved through full heat treatment . . . . the tensile collapse and burst requirements of the specifications can be met . . . . Our information indicates that there is only one manufacturer on this continent who has facilities to properly carry out this process."

The representatives of the C.P.A. stated that the API specifications do not require "normalizing" of welded tubular goods, except for the higher strength casing, such as N.80. Nevertheless, users apparently are reluctant to use welded casing unless it is so treated.

The C.P.A. also drew attention to a ruling of The Petroleum and Natural Gas Conservation Board of the Province of Alberta, stating the Board had not yet had sufficient experience to formulate a definite policy regarding the use of welded casing versus seamless casing.* The ruling did say, however, that

*For later communication from Conservation Board, see Appendix E.

"there have been numerous failures of electric-welded line pipe in oil and gas lines . . . . For this reason and until the electric-welded casing has been proven to be of equal strength to the seamless casing, the Board will not permit its use in deep wells or where it would be subjected to high pressures or exposed to a highly corrosive gas". Although there is no definite demarcation line between "deep" wells and other wells, the general consensus of opinion appears to be that any well which goes much beyond 5,000 or 6,000 feet could be considered a deep well. One responsible representative of the oil industry estimated that approximately half of all wells would be 5,000 feet or deeper.

Demand:

The consumption of oil-country goods in Canada has grown rapidly. Reliable statistics are available only for casing, but, since this product forms the greater part of total "down-hole" pipe, it gives a good indication as to trend. In 1950, domestic production of casing plus imports amounted to 34,683 tons; in 1954, it was 98,583 tons; in 1956, 8 months of imports plus 10 months of domestic production show a total of 113,772 tons. If tubing consumption, which is said to amount to 20 to 25 p.c. of the tonnage used, were added to the 1956 figures, these would be even more impressive.

It has been estimated by various oil-producing companies that their requirements of oil-country goods in 1957 will exceed 225,000 tons. This forecast is based on drilling 3,000 wells, about one-twelfth more than in 1956.

Cost of Casing and Tubing:

Oil producers estimate that from 15 to 20 p.c. of the total cost of drilling the average oil well consists of tubing and casing. On this basis the tubing and casing in an average well would cost about $15,000. The C.P.A. pointed out at the public hearing that if the pipe-companies' request for a 22½ p.c. rate of duty were implemented, the cost of the average well would be increased by about $3,375; this is an increase of roughly 4 p.c. in the cost of the average well.

Sources of Supply:

In most years practically all oil-country goods used by the Canadian oil industry have been imported. In the case of drill pipe, there is no Canadian production. Although tubing and casing, both seamless and welded, have been produced in Canada, the tonnage is small in relation to imports. It is generally agreed by both users and domestic pipe-manufacturers that the latter can obtain business only during periods of short supply; in other words, when imports cannot be obtained in sufficient quantity to meet the oil producers' requirements. The following table would appear to bear this out, since, in both 1952 and 1956, casing was in short supply throughout the world and in these years Page-Hersey was called upon to supply considerably greater tonnages than in other years when supplies were more freely available. Even in these years, Page-Hersey supplied a relatively minor proportion of the total needs.

Oil and Gas Well Casing
(tons of 2,000 lbs.)

	Canadian Production		
Year	Seamless	Welded	Imports
1950	1,037	—	33,646
1952	2,993	9,377	73,212
1953	1,042	—	95,617
1954	—	—	98,583
1955	35	158	91,833
1956	8,395 (10 mos.)	1,753	103,624 (8 mos.)

The reasons for this lack of business for Page-Hersey, (the sole Canadian producer until the present time) relate directly to price, sizes and types of casing. It was freely admitted by Page-Hersey at the public hearings that its prices are well above prices of imported casing. Secondly, Page-Hersey can produce seamless in sizes from $4\frac{1}{2}$ to 7 inches OD, whereas the demand is for sizes up to and including $13\frac{3}{4}$ inches. Lastly, while Page-Hersey can produce both welded and seamless casing, it charges a premium price for the latter type; this again increases the gap between this company's prices and those of imports, especially since the demand is for seamless casing. Page-Hersey contended, of course, that the policy hitherto prevailing of duty-free entry of oil-country goods had deprived that firm of any incentive to go more extensively than it had into the production of such tubing and casing.

The opening of the Mannesmann plant in 1957 will result in a wider range of casing being available in Canada in that this firm will produce seamless casing from $4\frac{1}{2}$ inches OD to $10\frac{3}{4}$ inches OD. Thus, with the exception of $13\frac{3}{8}$ inch casing, which is used in relatively small quantities, all sizes are likely to be made in Canada. Mannesmann has announced that it will initially produce grades H.40 and J.55, which account for over 90 p.c. of usage; in June, 1957, it will produce N.80 and P.110; and finally, it hopes to produce in 1958 tubing and coupling pipe. These grades of casing will, according to the company, be produced in all sizes and weights within the range indicated above. Mannesmann's ultimate capacity of 225,000 tons of casing and line pipe and 75,000 tons of tubing is the equivalent of something fairly close to present Canadian casing requirements and in tubing is greater than today's requirements. This company also stated at the public hearings its intention to make drill pipe, possibly in 1958.

Subsequent to the public hearings in June, Mannesmann made certain revisions in the above-outlined production schedule; these were made in the light of progress to the end of November in constructing the firm's new mill at Sault Ste. Marie. The revised schedule submitted by Mannesmann is as follows: By April, 1957, it will be producing line pipe and J.55 casing in sizes $5\frac{1}{2}$, 7 and $9\frac{1}{2}$ inches OD; other sizes of J.55 to $10\frac{3}{4}$ inches OD will be available later in the year. Casing in grades H.40, N.80 and P.110 will be produced in the third quarter of 1957, as required. Before January 1, 1958, the mill will have the capacity to produce 150,000 tons of casing per annum; of this amount approximately 100,000 tons will be available by April, 1957, and an additional 50,000 tons in August. The company stated that its casing will be threaded and completely ready for use. Engineering preparations for a tube mill are under way and it is planned that construction will be started in mid-1957 for completion in mid-1958.

The fact that Mannesmann has stated that it will have the capacity to produce 150,000 tons of casing per annum does not mean that the company is necesarily committed to producing this quantity. It would be posible, for instance, to increase output of line pipe at the expense of casing production; furthermore, the fact that a duty of $22\frac{1}{2}$ p.c. applies to line pipe under $10\frac{1}{2}$ inches in diameter for the transmission of petroleum, whereas casing enters duty-free, could have an influence on the allocation of production. The decision rests, of course, entirely with Mannesmann.

When Mannesmann brings these various lines into production, there is almost sure to be much less dependence upon imports, a shift in trade that will gain impetus as Mannesmann rounds out its lines, for the reason that oil-country goods must often be purchased on a "package" basis. Many pipe and tube mills, for example, are willing to sell tubing only if the purchaser takes a considerably greater tonnage of casing of 7-inch or greater diameter. In a number of instances, the quota ratio of tubing to casing is 18 to 100, whereas in actual usage the

ratio is nearer 25 to 100. As this may not infrequently leave the buyer in the position of having to pay a premium for tubing, he is inclined to buy his requirements of casing from a producer who can also supply tubing. Mannesmann states that it will be in this position by June, 1958; Page-Hersey has supplied tubing from time to time, but, it is understood, at a higher price.

Sales of casing in sizes 4½- and 5½-inch diameters and of grades N.80 and P.110 are frequently tied also to sales of larger-sized casing. The C.P.A. expressed some concern that supplies of tubing and high-strength casing from abroad might be difficult to obtain if increased tariffs should force oil companies to purchase the "bread and butter" lines in Canada. There are indications, however, that some European producers will sell high-strength casing without other casing. Whether or not they charge a premium is not known. Once Canadian producers are in a position to supply adequate quantities of both tubing and casing, in all sizes generally used, Canadian users may not be nearly so dependent on "tied" or "basket" purchases from non-Canadian sources, *provided, of course, that domestic prices are reasonably competitive.*

OPERATION OF THREE DRAWBACK ITEMS RE PIPES AND TUBES

In Schedule B to the Customs Tariff are three Drawback Items affecting the duty payable on imports of pipes and tubes. These items are Nos. 1017, 1018 and 1018a, all of which are set out in detail in NOTES REGARDING EXISTING TARIFF ITEMS in PART IV hereof. For the purposes of this section, these three items may be summarized as follows:

Item 1017: Provides for a drawback of 50 p.c. of duties paid on imports of *lapwelded* tubing four inches or more in diameter, for use in casing water, oil or gas wells or for the transmission of natural gas under high pressure;

Item 1018: Provides for a drawback of 50 p.c. of duties paid on imports of *seamless* tubing more than four inches in diameter, for use in the transmission of natural gas under high pressure;

Item 1018a: Provides for a drawback of 50 p.c. of duties paid on imports of *electric-welded* pipe more than sixteen inches in diameter, for use in the transmission of natural gas under high pressure.

Each of the above drawbacks applies equally to *couplings and parts* thereof for the pipes or tubes and the prescribed uses of the same.

At the public sittings relative to Reference No. 119, interest in the continuance of item 1017 was expressed by the representative of the Canadian Petroleum Association, who felt that the item might be widened to include, as well, seamless and electric-welded, with diameter of as low as two inches. He contended that the item might then be of advantage to municipalities in the distribution, locally, of natural gas. It was recorded at the public sitting that no drawback had been paid under this item for some years.

It will be noted that each of the two remaining items (1018 and 1018*a*) applies solely to pipes or tubes—in the one case, seamless; in the other, electric-welded—*used in gas pipelines.* In other words, neither item can be resorted to by the builders or users of oil pipelines.

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Allowing for the operation of these two drawback items (where drawback applies), it would appear that the *net* duty payable on imports thereunder would be as follows:

Size of Pipe or Tubing	Under B.P. Tariff	Under M.F.N. Tariff
Seamless, up to 4″:	15 p.c.	$22\frac{1}{2}$ p.c.
Seamless, 4″ to $10\frac{1}{2}$″:	$7\frac{1}{2}$ p.c.	$11\frac{1}{4}$ p.c.
Seamless, over $10\frac{1}{2}$″:	5 p.c.	$7\frac{1}{2}$ p.c.
Welded, up to $10\frac{1}{2}$″:	15 p.c.	$22\frac{1}{2}$ p.c.
Welded, $10\frac{1}{2}$″ to 16″:	10 p.c.	15 p.c.
Welded, over 16″:	5 p.c.	$7\frac{1}{2}$ p.c.
In short, the *lowest duty* applicable at present is:		
On Seamless:	5 p.c.	$7\frac{1}{2}$ p.c.
On Welded:	5 p.c.	$7\frac{1}{2}$ p.c.

It should be noted also that while item 1018 has been in effect for many years (see list of payments thereunder in notes under Part IV), item 1018*a* was added to Schedule B only in 1955. A list of drawbacks already paid (if any) under this item would, therefore, be of little value as a criterion of its importance, since potential recipients of drawbacks have a period of three years from importation in which to file claims with the authorities administering the drawback.

In drafting the Schedule embodied in Part IV of this Report, the Board has given consideration to the operation of these Drawback Items and to the views thereon, pro and con, that were put before it by the interested parties.

PART IV

The Tariff Board necessarily has regarded this Report on Reference No. 119 (Pipes and Tubes) as being in a very real sense supplementary to its Report on Reference No. 118 (Basic Iron and Steel), for the reason that the schedule recommended in the latter embodies proposals regarding the tariff treatment to be accorded—if the Report on Reference No. 118 be adopted—to the chief raw materials of the pipe and tube industry, viz: such flat-rolled forms of iron or steel as strip and so-called skelp, whether hot-rolled or cold-rolled. In the past, these raw materials have been dutiable at rates of Free—5 p.c.—5 p.c., with special provisions—either by tariff items or drawback items—for the free entry of such materials in the event that the pipes or tubes to be made therefrom were themselves entitled to entry free of duty.

The Board's report on Reference No. 118 has recommended that the duties applicable generally to the flat-rolled steels for pipe-making be increased from Free—5 p.c.—5 p.c. to Free—10 p.c.—20 p.c. The schedule below deals, inter alia, with the remaining raw material of the pipe-maker—steel billets for the manufacture of seamless pipe—by recommending the discontinuance of drawback item No. 1028.

The schedule proposed below for insertion in Schedule A to the Customs Tariff departs radically in structure from that at present operative: (1) classification of pipes or tubes on the basis of *diameter* is discontinued; (2) classification on the basis of *value* per pound is no longer a feature of the tariff; (3) the *number* of tariff and drawback items is substantially reduced; (4) several *end-use* items relative to pipes or tubes are recommended for cancellation; (5) in general, the *duties* to be applicable to pipes and tubes are increased; and (6) moderate rates of duty are proposed on so-called *"oil-country-goods"*, i.e.—casing and tubing for natural gas and oil wells.

Such increases in duty as the Board feels warranted in recommending reflect the growing importance of the pipe and tube industry in Canada and the significance of that industry in the national economy. The rates of duty proposed have been struck only after serious consideration of their impact, or possible impact, upon the users of pipes and tubes, more particularly the great extractive industries and the gas and oil pipe-line companies. The declining incidence of the protection afforded to the manufacturers of oil-country goods by (heretofore) highly favourable freight-differentials has been a factor that has had to be weighed by the Board in arriving at its proposals—and, indeed, in causing it to decide against reductions in duties which, but for this factor, might have appeared justifiable.

Having concluded its inquiry, and being desirous of presenting its proposals regarding Pipes and Tubes at or about the same date as that on which its Report on Basic Iron and Steel is transmitted,

The Tariff Board has the honour to submit to the Minister of Finance the following recommendations respecting the tariff treatment of Pipes or Tubes of Iron or Steel:

I. That Schedule A to the Customs Tariff, being Chapter 60, Revised Statutes of Canada, 1952, be amended by deleting therefrom the following tariff items, descriptions and rates of duty appertaining thereto: 396, 396*a*, 397(*a*), 397(*b*), 397(*c*), 397(*d*), 398, 398*a*, 398*b*, 398*c*, 398*d*, 398*e*, 399, 399*a*, 399*b*, 399*c*, 400, 410*b*, 410*d*, 410*g*, 410*z*, 848(1), 848(2), 848(3), 848(4), and by inserting the following items, descriptions and rates of duty in the said Schedule A:

	Goods Subject to Duty and Free Goods	British Preferential Tariff	Most-Favoured-Nation Tariff	General Tariff
1	Pipes or tubes of cast iron, whether or not coated or lined..........................	$7\frac{1}{2}$ p.c.	$12\frac{1}{2}$ p.c.	25 p.c.
2	Fittings and couplings of cast iron and parts therefor..............................	10 p.c.	20 p.c.	25 p.c.
3	(a) Pipes or tubes of iron or steel, n.o.p., with plain or processed ends, whether or not coated or lined; fittings and couplings therefor and parts of the same............................	$12\frac{1}{2}$ p.c.	$22\frac{1}{2}$ p.c.	30 p.c.
	(b) Pipes or tubes of iron or steel, seamless, cold-drawn........................	Free	5 p.c.	10 p.c.
4	Pipes or tubes of iron or steel, with plain, swelled or thickened ends, when imported for use exclusively in the manufacture or repair of pressure parts of boilers, pulp mill digesters and vessels for the refining of oil....................................	Free	5 p.c.	20 p.c.
5	Pipes or tubes of iron or steel, with plain ends, when imported for use exclusively in the manufacture of rolls for paper-making machinery.............................	5 p.c.	15 p.c.	30 p.c.
6	Tubes of iron or steel, seamless, when imported by manufacturers of bearings, for use exclusively in the manufacture of bearings in their own factories...........	Free	5 p.c.	15 p.c.
7	Fittings and couplings of iron or steel, not further manufactured than forged or bent to shape, whether or not deburred or descaled, when imported by manufacturers of welding fittings and couplings, for use exclusively in the manufacture of such fittings and couplings, in their own factories..........	Free	10 p.c.	25 p.c.
8	Machinery and apparatus for use exclusively in washing or dry cleaning coal at coal mines or coke plants; machinery and apparatus for use exclusively in producing coke and gas; machinery and apparatus for use exclusively in the distillation or recovery of products from coal tar or gas; and complete parts of all the foregoing, not to include motive power, tanks for gas, nor pipes or valves of iron or steel............	Free	10 p.c.	$12\frac{1}{2}$ p.c.
9	Well-drilling machinery and apparatus, and complete parts thereof, for use exclusively in drilling for water or in prospecting for minerals, not to include motive power.....	Free	Free	Free

	Goods Subject to Duty and Free Goods	British Preferential Tariff	Most-Favoured-Nation Tariff	General Tariff
10	Articles for use exclusively in the metallurgy or smelting of iron, viz.: machinery and apparatus for sintering or nodulizing iron ore, concentrated or not, or flue dust; machinery and apparatus for use exclusively in the construction, equipment and repairs of blast furnaces for smelting iron ore, such machinery and apparatus to include hot blast stoves and burners, blast piping and valves connecting the blowing engines with the furnace, scale cars, charging and hoisting apparatus, blast furnace gas piping, cleaners and washers; parts of the foregoing, not to include structural iron work nor pipes or valves of iron or steel.....	Free	5 p.c.	5 p.c.
11	Machinery and apparatus, n.o.p., and parts thereof, for the recovery of solid or liquid particles from flue or other waste gases at metallurgical or industrial plants, not to include motive power, tanks for gas, nor pipes or valves of iron or steel...........	5 p.c.	10 p.c.	12½ p.c.
12	(1) All machinery and apparatus and parts thereof (including motive power) and drilling mud, for use exclusively in exploratory or discovery work in connection with, and development, depletion and production of petroleum or natural gas wells....................	Free	Free	Free
	(2) Machinery and apparatus and parts thereof (including motive power) of a class or kind not made in Canada and drilling mud, for use in the exploration, discovery, development and operation of potash and rock salt mines or for use in the production of muriate of potash, or for use in the production of crushed and screened rock salt...............	Free	Free	Free
	(3) Pipes or tubes of iron or steel, commonly known as "oil-country goods", being casing or tubing and fittings or couplings therefor, for use in connection with natural gas or oil wells.......	5 p.c.	7½ p.c.	20 p.c.
	(4) Drill-pipe, for use in connection with natural gas or oil wells...............	Free	Free	Free
	(5) Materials for use in the manufacture of the goods enumerated in sub-items (1), (2), (3) or (4) of this item...........	Free	Free	Free

II. That Schedule B to the said Customs Tariff be amended by deleting therefrom the following drawback items, descriptions and amounts of customs duty subject to drawback thereunder: 1017, 1018, 1018a, 1028, and by inserting the following drawback item, description and amount of customs duty subject to drawback thereunder in the said Schedule B:

Item No.	Goods	When Subject to Drawback	Portion of Duty (not including Special Duty or Dumping Duty) Payable as Drawback
1018	Pipes or tubes of iron or steel: (a) seamless, more than four inches in diameter; (b) electric-welded, more than sixteen inches in diameter; and (c) fittings and couplings for the foregoing, and parts of the same....................	When used in the transmission of natural gas under high pressure to points of distribution	50 p.c.

H. B. McKINNON,
Chairman.

F. J. LEDUC,
Vice-Chairman.

W. W. BUCHANAN,
Member.

EXPLANATORY NOTES

REGARDING

TARIFF ITEMS

AND

DRAWBACK ITEMS

AS RECOMMENDED BY THE TARIFF BOARD

Reference No. 119

82676—5

RECOMMENDED TARIFF ITEMS

RECOMMENDED ITEM No. 1: CAST IRON PIPES

1. Pipes or tubes of cast iron, whether or not coated or lined:

$7\frac{1}{2}$ p.c. $12\frac{1}{2}$ p.c. 25 p.c.

This proposed item will replace existing tariff items 396 and 396a, the notes on which please see. As those notes reveal, the major imports under existing item 396 consist of cast-iron pressure pipe, while cast-iron soil pipe enters chiefly under item 396a. In each case, the United Kingdom is the chief source of supply.

At the public hearings, many requested that there be established separate items for pressure-pipe and soil-pipe, on the ground that these were the products of entirely separate divisions of the industry and, further, that the values per ton differed substantially. Another reason for the proposed division of the item was to facilitate the compilation of data re imports.

After due consideration, the Board has decided that one undivided item, as above, should suffice. The proposed rate of $7\frac{1}{2}$ p.c. under the B.P. Tariff is about the equivalent of the $5.00 per ton leviable at present under item 396; as regards a rate of $7\frac{1}{2}$ p.c. on soil-pipe, it is not regarded that this should prove a serious deterrent to imports which appear to have a value of about $130-$160 per ton.

Cast-steel pipe which, if imported in the past, would have been classifiable under either of existing items 396 or 396a (probably the latter) will not in future be admissible under the proposed item No. 1; most of it will fall under proposed item No. 3. The new item will, on the other hand, provide for not only coated but also *for lined pipe (e.g.—asphalt lined)*.

RECOMMENDED ITEM No. 2: CAST IRON FITTINGS

2. Fittings and couplings of cast iron and parts therefor:

10 p.c. 20 p.c. 25 p.c.

Under the existing tariff schedule, couplings and fittings of all kinds, including those of cast iron, have been dutiable under tariff item 400 at 20 p.c.—$22\frac{1}{2}$ p.c.—30 p.c. The Board suggests that *cast-iron* fittings be given a separate classification, partly on the ground that, unlike other steel fittings, they are not the product, solely, of a major industry but very frequently are produced in relatively small foundries in various provinces. (See note on tariff item 400). The rates proposed represent a small reduction in duty under the M.F.N. Tariff and a substantial reduction under the B.P. Tariff, it having been contended by British producers at the public hearings that they simply could not ship couplings or fittings to Canada in the face of the existing duty of 20 p.c.

RECOMMENDED ITEM No. 3: PIPES OR TUBES, N.O.P.

3. (a) Pipes or tubes of iron or steel, n.o.p., with plain or processed ends, whether or not coated or lined; fittings and couplings therefor and parts of the same :

$12\frac{1}{2}$ p.c. $22\frac{1}{2}$ p.c. 30 p.c.

Under the schedule now proposed, this will be the main (or "basket") item relative to pipes or tubes of iron or steel. It will cover, wholly or in part, such pipes and tubes as enter at present under some 15 or more existing items: Nos. 396a; 397(a), (b), (c) and (d); 398a, 398b, 398e; 399, 399a, 399b, 399c; 410b, 410g and 410z, the notes on each of which please see. It will cover also all fittings and couplings for such pipes or tubes (other than cast-iron fittings) which are dutiable at present under tariff item 400. As in the case of recommended item No. 1, coated or lined products are specifically provided for in the wording. By virtue of the "n.o.p." provision, the proposed item will include in its coverage all pipes or tubes, n.o.p., whether or not these are hot-rolled, cold-drawn or cold-reduced; and whether seamless, welded by any process, or not-joined. Since the proposed item provides for no distinction as to the diameter of the pipes to be admissible thereunder, it will not be subject to varying rates on the basis of that criterion, as is the situation at present under many tariff items which (in the event of the adoption of item No. 3) will disappear from the schedule.

Of the existing items which provide for duty on the basis of diameter, by far the most important are tariff items 397(a) and (b), the former of which covers pipes or tubes not more than 10½ inches in diameter; and the latter, those of larger diameters. More specifically, pipes of the seamless type are now made in Canada by Page-Hersey up to and including seven inches in diameter; pipes welded (by various processes) actually are manufactured at present up to 16 inches and in the near future will be produced up to 36 inches in diameter. Tubing is made in diameter ranges from a fraction of an inch to four or more inches, a very important producer, other than Page-Hersey, being Standard Tube at Woodstock. It appears to have been the policy of succeeding Governments in Canada to alter the diameter specified in the main item, 397(a), as Canadian production came into being—from two inches and smaller in 1897, to 10½ inches as at present. Despite production by Page-Hersey up to 16 inches, the tariff item has not been amended since 1930. Under the Board's proposals, item No. 3 will include all ranges and practically all kinds of pipes or tubes of iron or steel.

The pipe and tube industry in Canada is on the verge of a striking expansion —not only as regards ordinary seamless or welded pipes or tubes but also as regards those precise types or kinds known to the trade as "oil-country goods" (see proposed item 12(3)). These developments are more fully set out in the notes on existing tariff items and drawback items as well as in those portions of this Report headed Part II and Part III. In formulating its proposals regarding the rates of duty to be applied to its proposed item No. 3, the Board has taken cognizance of the changes now taking place in the industry in Canada, as well as of those in prospect in the immediate future; at the same time, it has tried to keep in mind not only the interests of non-Canadian producers but also those of certain segments of Canadian industry which are dependent to a very great extent on supplies of pipes and tubes.

Disregarding for the purposes of this note such special users as the petroleum industry and the gas-transmission companies—both of which are discussed in notes pertaining to certain end-use or drawback items—the tariff items which in the past have loomed largest in volume and value of imports have been: item 397(a), with rates of 15 p.c.—22½ p.c.—30 p.c. and 397(b), with rates of 10 p.c.—15 p.c.—20 p.c., (see Existing Item notes on each as to tonnages and values of imports). Equally, these have been the two tariff items of greatest value and significance for the Canadian producers of pipes and tubes. The rates of 15 p.c.—22½ p.c.—30 p.c. on item 397(a)—pipe not more than 10½ inches in diameter—have been protective in their incidence to the extent that imports

thereunder have represented normally only about 15 p.c. of total Canadian consumption. These protective duties have in the past been linked with corresponding rates of Free—5 p.c.—5 p.c. on skelp, the raw material of the pipe industry. In its Report on Reference No. 118 (Basic Iron and Steel) the Board has recommended that the duties on skelp or strip imported for the manufacture of pipes or tubes should be increased to Free and 10 p.c. (B.P. and M.F.N.). It sees no sound reason, however, why the M.F.N. rate on the finished products should be increased beyond the 22½ p.c. applicable at present to pipes and tubes not more than 10½ inches in diameter. While the pipe-maker's "processing margin" of 17½ p.c. (the difference between 22½ p.c. on his finished product and 5 p.c. on his raw material) will be reduced under these proposals to one of 12½ p.c., it is to be borne in mind that, to the extent he is now producing pipe over 10½ inches (and may in the very near future be producing up to diameters of 30 or 36 inches) his protection (M.F.N.) is increased from 15 p.c. to 22½ p.c. In so far as concerns the B.P. Tariff, the proposed rate of 12½ p.c. is a reduction of 2½ p.c. from the B.P. rate on item 397(a) and an increase of 2½ p.c. above the B.P. rate on existing item 397(b).

Another feature of this proposed item is that it will embrace all fittings and couplings dutiable at present under tariff item 400 at rates of 20 p.c.—22½ p.c.—30 p.c. Information elicited at the public sittings has induced the Board to propose the reduction of the B.P. rate from 20 p.c. to 12½ p.c.

As regards certain specific end-use items at present operative (in particular, items 398b, 398e, 399a, 399b, 399c; and in so far as relates to pipes or tubes thereunder, items 410b, 410d, 410g and 410z) the Board sees no justification for their continuance. Pipes or tubes at present classified under these items, or any one of them, will in future fall for the most part (and probably entirely) under the provisions of proposed item No. 3.

(b) Pipes or tubes of iron or steel, seamless, cold-drawn:

Free 5 p.c. 10 p.c.

Tariff item 398, as at present worded, covers cold-drawn seamless tubing, valued at not less than five cents per pound. Under this item is imported a very substantial tonnage of seamless cold-drawn tubing, much of which is manufactured into drill-pipe for hard-rock mining; some of this imported tubing may be used also in the manufacture of bushings, etc. There is very little domestic production of cold-drawn seamless tubing—although Page-Hersey has cold-drawing equipment and Standard Tube has machinery for cold-reducing. The evidence at the public sittings was largely to the effect that the Canadian tubing was "not good enough" for hard-rock drill-pipe and that, even if duties were to be increased, the makers of such mining pipe would continue to import their steel tubing, chiefly from the United States. The Board recommends continuance of the item altered in wording but unamended as to B.P. and M.F.N. rates.

RECOMMENDED ITEM No. 4: PRESSURE TUBES

4. Pipes or tubes of iron or steel, with plain, swelled or thickened ends, when imported for use exclusively in the manufacture or repair of pressure parts of boilers, pulp mill digesters and vessels for the refining of oil:

Free 5 p.c. 20 p.c.

This is a continuation in wording of an end-use item generally referred to as the "boiler-tube item", namely, existing item 399 (Free—Free—Free). For general information regarding the operation of the existing item see under Existing Item Notes. The Board sees no reason why the rates should not be revised to read: Free—5 p.c.—20 p.c.

RECOMMENDED ITEM No. 5: TUBES FOR PAPER-ROLLS

5. Pipes or tubes of iron or steel, with plain ends, when imported for use exclusively in the manufacture of rolls for paper-making machinery:

5 p.c.	15 p.c.	30 p.c.

At present, tubes for use in making rolls for paper-making machinery enter under either or both of two items: 398a, at Free—15 p.c.—30 p.c., or 397(a), at 15 p.c.—22½ p.c.—30 p.c., depending upon diameter. The rates proposed for the B.P. and M.F.N. Tariffs are regarded as a reasonable adjustment to a single classification from the two at present operative.

RECOMMENDED ITEM No. 6: TUBES FOR BEARINGS

6. Tubes of iron or steel, seamless, when imported by manufacturers of bearings, for use exclusively in the manufacture of bearings in their own factories:

Free	5 p.c.	15 p.c.

Existing tariff item 398c provides for entry, duty free, of seamless tubing valued at not less than five cents per pound, when imported for use in the manufacture of *roller* bearings. The item now proposed removes the reference to value per pound, is widened to cover the manufacture of any kind of bearing, and will, if adopted, impose a duty of 5 p.c. under the M.F.N. tariff.

RECOMMENDED ITEM No. 7: FITTINGS AND COUPLINGS

7. Fittings and couplings of iron or steel, not further manufactured than forged or bent to shape, whether or not deburred or descaled, when imported by manufacturers of welding fittings and couplings, for use exclusively in the manufacture of such fittings and couplings, in their own factories:

Free	10 p.c.	25 p.c.

This item, as did its predecessor (398d), covers materials for use in making couplings and fittings.

A number of minor revisions have been made in the wording, based on the recommendations of both pipe and fittings manufacturers. The B.P. and M.F.N. rates of duty are unchanged at Free and 10 p.c., respectively. The general rate has been reduced from 35 p.c. to 25 p.c.

RECOMMENDED ITEM No. 8: CERTAIN APPARATUS

8. Machinery and apparatus for use exclusively in washing or dry cleaning coal at coal mines or coke plants; machinery and apparatus for use exclusively in producing coke and gas; machinery and apparatus for use exclusively in the distillation or recovery of products from coal tar or gas; and complete parts of all the foregoing, not to include motive power, tanks for gas, nor pipes or valves of iron or steel:

Free	10 p.c.	12½ p.c.

Existing tariff item 410b provides for all the machinery and apparatus named in the above proposed item, but *excludes* from the benefits of the item pipes or valves of iron or steel 10½ *inches or less in diameter.* The proposed item excludes *all* pipes or valves, which probably will become classifiable under proposed item No. 3. The opinion of the Board is that this end-use item need not be continued in so far as concerns pipes or valves of iron or steel. (See note on 410b under Existing Item notes.)

RECOMMENDED ITEM No. 9: CERTAIN APPARATUS

9. Well-drilling machinery and apparatus, and complete parts thereof, for use exclusively in drilling for water or in prospecting for minerals, not to include motive power:

Free	Free	Free

Existing item 410d (the note on which please see) provides entry, duty free, of certain goods, for the uses named in the above proposed item, *and* as well for certain other goods, including seamless tubing of a class or kind not made in Canada, for use in casing natural gas or oil wells. As will be seen from the note on recommended item No. 12 of this proposed schedule, all the "natural gas or oil well" requirements provided for at present under item 410d are now provided under the terms of proposed item No. 12; hence, item No. 9, above, is merely what remains of item 410d after the re-grouping of "oil-country" goods in new item No. 12.

RECOMMENDED ITEM No. 10: CERTAIN APPARATUS

10. Articles for use exclusively in the metallurgy or smelting of iron, viz.: machinery and apparatus for sintering or nodulizing iron ore, concentrated or not, or flue dust; machinery and apparatus for use exclusively in the construction, equipment and repairs of blast furnaces for smelting iron ore, such machinery and apparatus to include hot blast stoves and burners, blast piping and valves connecting the blowing engines with the furnace, scale cars, charging and hoisting apparatus, blast furnace gas piping, cleaners and washers; parts of the foregoing, not to include structural iron work nor pipes or valves of iron or steel:

Free	5 p.c.	5 p.c.

Under existing item 410g, all the above machinery and apparatus for the uses specified are provided (at rates of Free—5 p.c.—5 p.c.) *except* "wrought iron pipe or valves $10\frac{1}{2}$ inches and under in diameter", these being specifically *excluded* from the item. Under the proposed item, the exclusion is widened to embrace pipes and valves of all diameters.

RECOMMENDED ITEM No. 11: CERTAIN APPARATUS

11. Machinery and apparatus, n.o.p., and parts thereof, for the recovery of solid or liquid particles from flue or other waste gases at metallurgical or industrial plants, not to include motive power, tanks for gas, nor pipes or valves of iron or steel:

5 p.c.	10 p.c.	$12\frac{1}{2}$ p.c.

Existing item 410z, in providing for certain machinery and apparatus for specified uses, excludes from such coverage pipes and valves $10\frac{1}{2}$ inches or less in diameter. Under the proposed item above, *all* pipes or valves of iron or steel are excluded.

RECOMMENDED ITEM No. 12: OIL-COUNTRY GOODS

Existing tariff item 848 (in four sub-items) provides for free entry of much machinery and apparatus—including (by specific reference thereto) seamless, lap-welded and electric-welded iron or steel casing, tubing and drill-pipe—for use in connection with natural gas or oil wells. It provides, as well, for certain

machinery and apparatus—including certain casing and tubing—for use in connection with the extraction of rock salt and potash. Further, in its final sub-item, item 848 provides for the free entry of "materials for use in the manufacture of the goods enumerated" in the other sub-divisions of the item. Any one wishing to understand the provisions of recommended item No. 12, which supersedes item 848 in its entirety, should read first the note on item 848 under Existing Item Notes of this Report.

Proposed item No. 12 may best be dealt with in terms of its five sub-items:

(1) All machinery and apparatus and parts thereof (including motive power) and drilling mud, for use exclusively in exploratory or discovery work in connection with, and development, depletion and production of petroleum or natural gas wells:

Free	Free	Free

This is a continuation, unchanged as to either wording or rates, of item 848(1) *except* as regards the pipes and tubes referred to therein.

(2) Machinery and apparatus and parts thereof (including motive power) of a class or kind not made in Canada and drilling mud, for use in the exploration, discovery, development and operation of potash and rock salt mines or for use in the production of muriate of potash, or for use in the production of crushed and screened rock salt:

Free	Free	Free

This is a continuation, unchanged as to either wording or rates, of item 848(2)—which did not fall within the terms of reference to the Board.

(3) Pipes or tubes of iron or steel, commonly known as "oil-country goods", being casing or tubing and fittings or couplings therefor, for use in connection with natural gas or oil wells:

5 p.c.	$7\frac{1}{2}$ p.c.	20 p.c.

This sub-item provides for the casing and tubing covered at present by the final clause of existing item 848(1)—which, it will be recalled, has been excluded from the terms of recommended item 12(1). *All* casing or tubing of iron or steel, welded or seamless and regardless of diameter, continue, under this revised sub-item, to be covered if for the purposes named, but the Board has recommended that such casing and tubing be in future dutiable at the rates above quoted.

Seamless tubing or casing can be and has been made by Page-Hersey up to seven inches in diameter. Shortly, much wider ranges of casing will be available from Mannesmann. Favourable freight differentials which, at present, serve to provide, in western oil fields, a substantial degree of protection for the Canadian producers of oil-country goods, have now been diluted by way of further agreed freight charges to be effective on and after December 27, 1956; these will apply to casing and tubing imported from overseas countries and laid-down at consuming points in the provinces of western Canada, as far east as Manitoba. In short, the Canadian producers who, up to the present, have been able to shelter under the umbrella of favourable freight differentials must now depend in large measure upon the customs tariff if they are to have any protection at all. For the purposes of this sub-item it is unnecessary to repeat here all the information regarding oil-well and gas-well casing and tubing that is set down in the note on item 848, in Existing Item Notes; in the section headed "Freight Rates" in Part II of this Report; and, again, in the section of Part III entitled "Oil-

Country Goods". In the light of all information secured, as summarized in the portions of this Report referred to immediately above, the Board feels justified in recommending the rates of duty now proposed.

(4) Drill-pipe, for use in connection with natural gas or oil wells:

Free	Free	Free

Drill-pipe at present enters duty-free under existing item 848(1). Drill-pipe is not produced in Canada and continuance of such free entry is recommended.

(5) Materials for use in the manufacture of the goods enumerated in sub-items (1), (2), (3) or (4) of this item:

Free	Free	Free

The Board recommends continuance of this (existing) provision of 848(4) despite the proposals regarding oil-country goods.

Note: Existing sub-item (3) of item 848 has been deleted from the schedule, no interest in it or in its continuance having been manifested, at the public sittings, by anyone. Its number (3) has, therefore, been allotted to the provision relative to oil-country goods.

RECOMMENDED DRAWBACK ITEM 1018

1018: Pipes or tubes of iron or steel:

(*a*) seamless, more than four inches in diameter;

(*b*) electric-welded, more than 16 inches in diameter; and

(*c*) fittings and couplings for the foregoing, and parts of the same: when used in the transmission of natural gas under high pressure to points of distribution .... 50 p.c.

This item is intended to be a substitute for two existing drawback items, 1018 and 1018a. The operation of these existing items is described in the notes thereon in the Existing Item Notes section of this Report.

Briefly, item 1018 grants a drawback of 50 p.c. on *seamless* tubing more than four inches in diameter, and item 1018*a* grants a similar drawback on *electric-welded* pipe more than 16 inches in diameter: both when used in the transmission of natural gas under high pressure. Item 1018, however, uses the words "from the gas wells to points of distribution", whereas item 1018*a* says simply "transmission under high pressure to points of distribution".

There would appear to be no reason for continuing both items and the Board's proposed item, above, combines these, leaving out the phrase "from the gas wells". It recommends that the present drawback rate of 50 p.c. be retained.

EXISTING DRAWBACK ITEMS DROPPED

1017: *re* Lap-welded tubing (see note in Existing Item Notes)

1028: *re* Billets for seamless pipe (see note in Existing Item Notes)

EXPLANATORY NOTES

REGARDING

TARIFF ITEMS

AND

DRAWBACK ITEMS

AS EXISTING AT DATE OF REPORT

Reference No. 119

82676—6

EXISTING TARIFF ITEM 355b: ALLOY TUBES

335*b*: Metal alloy strip or tubing, containing not less than thirty per cent by weight of nickel and twelve per cent by weight of chromium, for use in Canadian manufactures

Free	Free	20 p.c.

This item is a temporary item, created by Order in Council.

Production: Not available.

Imports: Not available.

Exports: Not available.

U.S.A. Duty: Various.

Bound Rates: There are no bound rates.

Both Atlas Steels and Oakton Products moved for deletion of steel tubing from this tariff item, the implication being that it would then be dutiable under tariff item 397(*a*) at an M.F.N. rate of 22½ p.c. Oakton Products requested this revision in order to obtain a margin between the raw material, strip, and the finished tubing. On the other hand, Atlas requested that the strip also be dutiable. Proposals regarding strip and tubing are dealt with under Reference No. 118.

International Nickel Company, which supplies Oakton Products with strip from its mill at Huntington, West Virginia, provided a history of the item and suggested that it should be left as it is until the situation with regard to composition and end use be clarified from a technical point of view.

EXISTING TARIFF ITEM 396: CAST IRON PRESSURE PIPE

396: Pipe, cast, of iron or steel, valued at not more than five cents per pound—(s.c. 5181)

per ton	$5.00	$12.00	$14.00
GATT		$10.00	

This item was established early in 1930. The wording remains unchanged but rates have been revised on several occasions. In 1930 the B.P. rate was increased from $5.00 to $7.00 per ton, the Intermediate from $9.00 to $12.00 per ton, and the General from $10.00 to $14.00 per ton. In 1937, the B.P. rate was reduced to $5.00 per ton. The GATT reduction in the Intermediate or M.F.N. rate became effective in January, 1948.

Cast iron *pressure* pipe is sold domestically in the United Kingdom at not more than 5 cents per pound and most imports from that source would be entitled to entry under this item. The domestic price of cast iron pressure pipe in the United States is currently higher than 5 cents per pound and imports into Canada would not be admissible under this item. Cast iron *soil* pipe is, however, by reason of increased value, now classifiable mainly under tariff item 396*a* rather than under item 396. Cast *steel* pipe may enter under this item or tariff item 396*a*, depending on value.

Production: Domestic production of cast iron pressure pipe has apparently supplied about 80 p.c. of total Canadian consumption in recent years. Cast iron pressure pipe is used almost solely in municipal waterworks systems; the following table outlines production (cast iron water pipe) in recent years.

Year	*Tons of 2,000 Pounds*
1951	101,650
1952	71,630
1953	91,580
1954	103,550
1955	119,225

Imports: Because of the fact that this item is set up on the basis of value it cannot be said definitely that import totals represent one type of pipe or another. In recent years, however, it would appear that the pipe entitled to entry under this item has been largely cast iron pressure pipe. Tonnage imported in 1953 was 23,121 tons; 1954, 31,365 tons; and 1955, 21,076 tons, almost all of which came from the United Kingdom. Imports apparently represent between 10 and 20 p.c. of total Canadian consumption.

Exports: Not available.

Ad valorem equivalents: 1954—B.P. 7 p.c.; M.F.N. 10.6 p.c.

U.S.A. Duty: 10 p.c. ad valorem.

Bound Rates: B.P. rate bound at $5.00 (GATT note); M.F.N. rate bound at $10.00 to France and Benelux (GATT—Geneva).

Cross-reference: Recommended Item 1.

This item covers mainly cast iron pressure pipe. Canada Iron Foundries Limited suggested a special tariff item dealing with cast iron pressure pipe only and carrying rates of 20, 22½ and 30 p.c., as now in effect for cast iron pressure pipe fittings (tariff item 400). In requesting this upward revision, the company pointed out that the United Kingdom's share of the Canadian market had grown from zero to 23 p.c. during the period 1946-54; it feared that imports would further increase with the opening of the St. Lawrence Seaway. Canada Iron Foundries felt that the success of the United Kingdom exporters in the Canadian market was based on lower labour and material costs, an advantage which, it said, it could not overcome by more efficient production methods, since manufacturing processes were the same in both countries. It further stated that while such increase in duty would serve to partially offset the disadvantage, the proposed rates would not increase the Canadian producers' share of the market but rather would serve to maintain it at the same level.

The other Canadian producer, Anthes-Imperial (Winnipeg), suggested rates of 15, 20 and 27½ p.c. It stated that such rates would give the company a greater share of the Western market and permit the acquisition of modern production equipment. This company's representative said that present operations are unprofitable. He went on to say that the competitive position of his company steadily decreases westward because of high freight charges; for example, the rail rate from Winnipeg to Vancouver is greater than the ocean rate from British ports to Vancouver.

Since pressure pipe is in large part used for municipal waterworks systems it was natural that objection to an increase in rate should come mainly from municipal corporations. Objections were registered by the Town of Acton, the City of Longueuil, the Public Utilities Commission of Galt, and the Public Utilities Commission of Woodstock. These sources stated that Canada Iron Foundries is the only domestic supplier in Central Canada and to increase the rates of duty would be to place this one firm in a position to monopolize the market.

British manufacturers of pressure pipes objected to the rates proposed and suggested instead that the same rates should remain in effect, or if possible, there should be a reduction. However, Stanton Ironworks Company Limited, contending that it was a natural supplier of the Canadian market, particularly in areas on either Coast, suggested a special pressure pipe item, with free entry of such pipes and fittings under the B.P. Tariff. Clay Cross (Iron and Foundries) Limited recommended a reduction but did not specify the amount of the reduction. Clay Cross sells only on the West Coast. Staveley Iron and Chemical Company Limited recommended only that there be no increases in the rate.

Noticeable throughout the evidence at the public hearings was the widespread interest in having fittings dutiable at the same rate as the pipes for which they were intended.

EXISTING TARIFF ITEM 396a: CAST IRON SOIL PIPE

396*a*: Pipe, cast, of iron or steel, n.o.p.—(s.c. 5182)

Free	7½ p.c.	10 p.c.

This item was established in its present wording in 1930. The B.P. rate was reduced from 5 p.c. to Free in 1937.

This item covers mainly cast iron soil pipe which, because of increasing prices, is now valued at more than 5 cents per pound and therefore not admissible under tariff item 396. It is presumed that cast steel pipe would in large part also be covered by item 396a, although the trade in cast steel pipe would be negligible in proportion to the volume of soil pipe imported.

Production: By far the greater part of soil pipe consumed in Canada comes from domestic sources. Production has been of the following order in recent years:

Year	*Tons of 2,000 Pounds*
1951	30,000
1952	37,200
1953	39,200
1954	45,400
1955	43,500

Crane Limited, Montreal; Anthes-Imperial Company Limited, St. Catharines; Soil Pipe and Fittings Limited, Mimico; J. A. Wotherspoon, Oakville; and Associated Foundry Limited, Vancouver, account for approximately 80 p.c. of Canadian production, according to evidence submitted by the Canadian Institute of Plumbing and Heating.

Imports: Since tariff item 396a provides for all cast iron pipe valued at more than 5 cents per pound, it is conceivable that statistics of import totals might include shipments of pressure pipe or steel pipe, as well as of soil pipe. It would appear, however, that soil pipe is by far the largest item involved. Imports in recent years have been as follows: in 1953, 4,380 tons; in 1954, 3,410 tons; in 1955, 4,330 tons, with more than three-quarters of these totals coming from the United Kingdom.

Exports: Not available.

U.S.A. Duty: 10 p.c.

Bound Rates: B.P. rate bound at Free (GATT note); M.F.N. rate bound at 7½ p.c. to Benelux (GATT—Geneva).

Cross-reference: Recommended Item 1.

Evidence at the public hearings in connection with this tariff item was concerned solely with cast iron soil pipe. The Canadian Institute of Plumbing and Heating, representing Canadian manufacturers accounting for 80 p.c. of Canadian soil pipe production, requested that tariff items 396 and 396a be combined into one item reading "Pipe, cast, of iron or steel, n.o.p." with rates of 15, 20 and 27½ p.c. The proposal was designed to correct the situation under which imports from the United Kingdom, at one time dutiable under item 396 at a rate of $5.00 per ton, were now, by virtue of increased price, admissible under item 396a free of duty. The Institute stated that the factory costs of Canadian manufacturers were higher than the landed cost of soil pipe imported from the United Kingdom.

In objecting to the rates proposed, Allied Iron Foundries Limited, the only United Kingdom exporter of soil pipe to Canada in recent years, stated that such rates would reduce the margin of British preference and impose prohibitive duties. Almost all of Canadian soil pipe imports come from the United Kingdom. In 1953, imports from that source of soil pipe 6 inches and under in diameter constituted only 11 p.c. of combined Canadian production and imports from the United Kingdom. (Soil pipe over 6 inches in diameter comes mainly from Canadian sources.)

EXISTING TARIFF ITEM 397: PIPES AND TUBES

Item 397 is the main item in the customs tariff under which pipes and tubes are classified. Its four sub-divisions describe pipes and tubes on the basis of size, method of production, etc. These sub-items are discussed below:

397: Pipes and tubes, of wrought iron or steel, plain or coated:—

(a) Welded or seamless, with plain or processed ends, not more than 10½ inches in diameter, n.o.p.—(s.c. 5188)

	15 p.c.	27½ p.c.	30 p.c.
GATT		22½ p.c.	

This item was created in 1930. The wording and rates are unchanged since that time except for the GATT reduction. Previous tariff history suggests that, as Canadian manufacturers increased their range of sizes, the item was changed to provide increased coverage. From 1897 to 1907, the counterpart item covered pipes and tubes 2 inches and smaller in diameter; from 1907 to 1914, 4 inches and smaller; from 1914 to 1930, 10 inches and smaller; and from 1930 to date, 10½ inches and smaller.

Production: Because of the numerous end-use items affecting pipes and tubes it is difficult to arrive at an accurate figure of Canadian production of the pipes and tubes classifiable under this tariff item. Since the Board does not have the basic data for such a compilation, no attempt is made to show production data as precisely applicable to this item only. Because of end-use concessions, drawbacks, and the difficulty of precisely matching production with a particular tariff item, the Board cannot cite specific tonnages as being relative to item 397(*a*) and no other. It estimates, however, that the tonnages would be several times those shown in the note re "Production" on item 397(*b*).

Imports: Imported pipes and tubes classified under this item and under item 397(c) amounted to 35,828 tons in 1953; 32,414 tons in 1954; and 34,882 tons in 1955. By far the greater part of these totals would be comprised of item 397(a) materials; 85 p.c. in 1955.

Exports: Not available.

U.S.A. Duties: Range from 7/20 of a cent per pound to 7/8 of a cent per pound on the smaller sizes; 11½ p.c. on the larger sizes.

Bound Rates: B.P. rate bound at 15 p.c. (GATT note); M.F.N. rate bound at 22½ p.c. to the United States (GATT—Geneva).

Cross-reference: Recommended Items 3 and 5.

Page-Hersey Tubes, Limited requested that the item be broadened to cover pipes and tubes 16 inches and under, a recommendation supported by Standard Tube and T.I. Limited and Canadian Western Pipe Mills Ltd. These producers are satisfied with the existing rates of duty (subject to the rate on raw materials remaining as at present). Raw material is said to account for about 65 p.c. of the cost of welded pipe. Should the raw material rate be increased, Page-Hersey

asked that the rate on the finished product be revised upwards to maintain the existing "spread" of 17½ p.c. (M.F.N.) between the rate on their raw materials and that on their finished product.

Among the objections to any broadening of the scope of item 397(a) were those registered by Dominion Natural Gas Company, Limited, serving gas to 55,000 families in Ontario, and Lakeland Natural Gas Limited, holding franchises for gas distribution systems in communities between Toronto and Montreal. These firms feared that higher duties would inevitably result in higher costs which would have to be passed along to the consumer. Canadian Coupling & Fittings Limited opposed any increase.

One United Kingdom manufacturer, Stewarts and Lloyds, Limited, claimed that the market for oil-country and line pipe is almost insatiable and as a consequence buyers have to secure their material where they can obtain it; any increase in rates would simply penalize the Canadian user.

Alternative proposals were offered by several parties: The Canadian Petroleum Association suggested a reduction in the rate of duty. Because of increased requirements for drilling purposes, gathering systems, gas plants, injection schemes, etc., the petroleum industry would have to go outside Canada to obtain a large part of its pipe. As well, the Association stated that Canadian mills could not meet immediate demands and probably would not be able to meet future demand. Page-Hersey countered with the statement that it was able to offer better deliveries than any other pipe mill in the world.

The John Inglis Co. Limited recommended a reduction in rate from the prevailing 15, 22½ and 30 p.c. to 5, 10 and 20 p.c., indicating that the existing rates on pipe, which is a raw material for secondary industry, are too high and do not permit a reasonable spread between pipe and the finished products. In the production of heat exchangers, for example, pipe might represent as much as 60 p.c. of total material cost.

Boyles Bros. Drilling Company Ltd. stated that neither Canadian nor British steel tubular products were suitable for the manufacture of diamond core drills and as a consequence the company was forced to import its supplies of tubes for the manufacture of drills. Under the circumstances, the company requested free entry under B.P. and M.F.N. schedules, with two special tariff items to be established. The company pointed out that finished drills enter either at Free or 10 p.c. and that the rate on their raw materials is higher than that on their finished products.

The A. M. Byers Company of Pittsburgh recommended that special tariff items be created for genuine *wrought* iron pipes and tubes carrying lower rates of duty; the company stated that such pipe is not manufactured in Canada, is not competitive with steel pipe, and is used only for special installations. The company exported 996 tons to Canada in 1955 and hoped, with a reduction in rate, to be able to increase its sales.

Trans-Canada Pipe Lines Limited indicated that it had no objection to the proposed revision as long as a special tariff item or drawback item were provided for pipe used in natural gas transmission lines. Interprovincial Utilities Limited supported the brief of Trans-Canada Pipe Lines.

397: Pipes and tubes, of wrought iron or steel, plain or coated:—

(b) Welded or seamless, with plain or processed ends, more than 10½ inches in diameter, n.o.p.—(s.c. 5187)

10 p.c. 15 p.c. 20 p.c.

This item was established in its present wording in 1930, with rates identical with those currently in force.

Production: In 1934 Page-Hersey Tubes, Limited increased its range to include $12\frac{3}{4}$ inch (outside diameter) pipe and in January, 1950, the company further increased its range to 16 inch. This company's production tonnages in 1953, 1954, 1955 were 12,300, 32,702 and 54,472 tons respectively.

Imports: Imports of pipe more than $10\frac{1}{2}$ inches in diameter fluctuated widely in keeping with pipeline construction activity. Import totals in recent years have been as follows:

	1953	*1954*	*1955*
	$	$	$
United Kingdom	940,272	737,428	211,719
United States	14,674,217	15,971,255	2,880,439
Other	1,088	87,832	1,263
Total	15,615,677	16,796,515	3,093,421

The greater part of these imports is mostly comprised of pipe over 16 inches in diameter.

Exports: Not available.

U.S.A. Duty: $11\frac{1}{2}$ p.c. ad valorem.

Bound Rates: B.P. rate bound at 10 p.c. (GATT note); M.F.N. rate bound at 15 p.c. to U.S.A. (GATT—Geneva).

Cross-reference: Recommended Item 3.

Page-Hersey proposed that this item be revised to cover pipe of 16 inches and larger—(1) in sizes made in Canada, (2) in sizes not made in Canada. The company's proposal reads:

Pipes and tubes of wrought iron or steel plain or coated:—

(b) Welded or seamless with plain or processed ends, more than 16 inches in diameter, n.o.p.

(1) when of a size larger than made in Canada

	10 p.c.	15 p.c.	20 p.c.

(2) when of a size not larger than made in Canada

	15 p.c.	$27\frac{1}{2}$ p.c.	30 p.c.
GATT		$22\frac{1}{2}$ p.c.	

The company is now engaged in a joint undertaking to manufacture pipe up to 36 inches in diameter.

A wide variety of comment and counterproposal was offered at the public hearings by parties objecting to the Page-Hersey proposal. Canadian Petroleum Association, representing 97 p.c. of those in Canada engaged in the exploration, drilling, producing and supply phases of the petroleum industry as well as a high proportion of the companies engaged in transmission phases, opposed any upward increase, either through rewording or revision of rates. They suggested instead that there be a reduction in rates of duty since the industry's requirements of line pipe are very great. It was pointed out that Trans-Canada Pipe Lines Limited is building one of the longest lines in the world; that Westcoast Transmission is completing major lines; that Westspur Pipe Line is setting up in the Souris valley; Pembina and other oil fields are being developed, and each company has small lines of one type or another to be built. These users said that the Canadian pipe producer cannot even come close to meeting demand and the industry requested the right to purchase pipe requirements without penalty whenever and wherever it is available in the required quantities. Any increase

in the rates affecting line pipe, would increase cost and serve to restrict the geographical area in which Canadian crude oil or gas could be competitively marketed. Statements as to availability were countered by Page-Hersey, which stated that there was no shortage of pipe for above ground use (of the sizes the company produces).

The Interprovincial Pipe Line Company indicated that it did not feel the revision requested by Page-Hersey was justified; it felt that the applicant should prove the need for protection and that tariff rates should be established in the light of the facts.

Trans-Canada Pipe Lines Limited stated that duties and sales taxes payable on pipe requirements for the construction of the company's line from Alberta to Montreal would amount to more than $20 million in the next three years. It said that pipe is the largest single cost element in construction, and capital costs are a major element in overall costs. It further asserted that any increase in pipe costs would directly affect consumer prices, or returns to gas producers, or both, and the company therefore objected to any increase in the amount of duties payable. Trans-Canada felt that the increase in rate proposed by Page-Hersey would not direct a greater tonnage to Page-Hersey since the latter was not in a position to handle more than half of Trans-Canada's requirements; therefore, the increase in rate would serve only to increase Trans-Canada's costs. Trans-Canada also objected to Page-Hersey's proposal that "made in Canada" be established on the basis of size, claiming that other factors were also of importance. Interprovincial Utilities Limited supported the brief of Trans-Canada.

The John Inglis Co. Limited recommended that rates on pipe of a diameter not made in Canada be reduced from 10, 15 and 20 p.c. to Free, Free, Free, advancing the argument that there should be a spread between the rate on raw materials and the rate on products which the company manufactures.

Imperial Oil Limited, although not referring specifically to 397(a) or 397(b), recommended in general that rate revisions should apply only to products that are made in Canada in sufficient quantity and of satisfactory quality.

Two United Kingdom manufacturers objected to Page-Hersey's proposals. Stewarts and Lloyds opposed any change, indicating that of the four-to-seven million dollars export business it does annually with Canada, up to 20 p.c. would be of sizes from $10\frac{3}{4}$ inches to 16 inches. South Durham Steel & Iron Co. Ltd. opposed any increase in the existing B.P. rate and any reduction in the amount payable as drawback under tariff item 1018a. During the period January, 1955 to June, 1956, the company had secured Canadian contracts for pipes (20 inches to 30 inches in diameter) amounting to approximately 300,000 tons and having a total value of about $50 million. Both firms pointed out that there is at present a world shortage of line pipe and that the imposition of higher duties would penalize the Canadian user of pipe and the consumers of gas.

397: Pipes and tubes, of wrought iron or steel, plain or coated:—

(c) Not joined, with plain ends, not more than $2\frac{1}{2}$ inches in diameter, n.o.p.—(s.c. 5185)

5 p.c. 10 p.c. 15 p.c.

This item was created in its present wording in 1930 with rates identical with those currently in force.

Production: Production data are available only in connection with the operations of Page-Hersey. This company's output in terms of value has been of the following order in recent years:

1951	$ 53,519
1952	21,491
1953	12,885
1954	13,535
1955	n.a.

Imports: Small in proportion to the total trade in pipes and tubes. In terms of value, imports amounted to $46,221 in 1953; $60,598 in 1954; $95,042 in 1955, with over 90 p. c. coming from the United States.

Exports: Not available.

U.S.A. Duty: Ranging from 7/20 of a cent per pound to $\frac{7}{8}$ of a cent per pound.

Bound Rates: B.P. rate bound at 5 p.c. (GATT note); M.F.N. rate bound at 10 p.c. to Benelux (GATT—Geneva).

Cross-reference: Recommended Item 3.

Page-Hersey and Standard Tube, in requesting rates of duty identical with those under tariff item 397 (*a*)—15 p.c., 22½ p.c., 30 p.c.—suggested that there is no logical reason why an unwelded or unjoined pipe should be accorded a lower rate of duty than a welded pipe.

No specific opposition was registered at the public hearings, although the Canadian Petroleum Association, as part of its general representations in connection with all pipe-items, indicated opposition to any increase, and suggested rather a reduction in rates.

397: Pipes and tubes, of wrought iron or steel, plain or coated:—
(*d*) N.o.p.—(s.c. 5191)

	12½ p.c.	27½ p.c.	30 p.c.
GATT		15 p.c.	

This item was created in 1930. In 1937 the B.P. rate was reduced from 15 p.c. to 12½ p.c.

Production: Not available.

Imports: Apparently comprise a pot-pourri of pipes and tubes, as evidenced by the following values which move in differing directions from year to year:

Year	$
1950	770,846
1951	1,433,480
1952	1,371,197
1953	833,235
1954	708,742
1955	1,694,081

Exports: Not available.

U.S.A. Duty: 11½ p.c. on pipes and tubes n.s.p.

Bound Rates: B.P. bound at 12½ p.c. (GATT note); M.F.N. rate bound at 15 p.c. to the United States (GATT—Geneva).

Cross-reference: Recommended Item 3.

Both Page-Hersey and Standard Tube argued that there is no justification for rates lower than under 397(*a*); they recommended an appropriate increase. Atlas Steels advocated cancellation and inclusion under 397(*a*).

Specific objections were not raised at the public hearings. The Canadian Petroleum Association included this item in its general objections to rate increases, however, and recommended that a reduction in rates might be provided. In discussion concerning the nature of the pipe admissible under this item, it was brought out that at present the item covers imports of culvert pipe, pipe wrapped with asbestos or other wrapping, and specially constructed pipe, such as pipe lined with cement.

EXISTING TARIFF ITEM 398: SEAMLESS PIPES AND TUBES

398: Pipes and tubes, of steel, seamless, cold drawn, plain ends, valued at not less than five cents per pound, n.o.p.—(s.c. 5186)

Free	5 p.c.	5 p.c.

This tariff item was established in 1930 with wording and rates that have remained unchanged since that time.

Production: Production of cold-drawn seamless pipe—classifiable under items 398, 398*a*, 398*b*, 398*c*, 398*d* and 398*e*—has been as follows in recent years:

Year	*Tons of 2000 Pounds*
1951	2,458
1952	2,374
1953	802
1954	146
1955	153

Imports: Available statistics do not show the tonnage or value of imports under this item per se. Total imports of cold-drawn seamless pipe are as follows:

Year	*Tons of 2000 Pounds*
1951	10,463
1952	9,868
1953	10,800
1954	10,269
1955	10,315

Exports: Not available.

U.S.A. Duties: Ranging from 7/20 of a cent per pound to $\frac{7}{8}$ of a cent per pound in smaller sizes; $11\frac{1}{2}$ p.c. on pipes n.s.p.

Bound Rates: B.P. rate bound at Free (GATT note); M.F.N. rate bound at 5 p.c. to the United States (GATT—Geneva).

Cross-reference: Recommended Item 3(*b*).

Page-Hersey, Standard Tube and T.I. Limited, and Atlas Steels Limited advocated cancellation or rewording to provide rates of duty equal to those under 397(*a*). Page-Hersey indicated that the M.F.N. rate of 5 p.c. on finished pipe is less than the effective rate that company pays in importing billets to

make the pipe. Any business it had booked under item 398 has been sold at cost plus a reasonable profit, with no attempt to meet the pricing of import competition, which enters duty free (B.P.) or at 5 p.c. (M.F.N.). It would be necessary to sell at a loss, Page-Hersey indicated, to meet import prices. Standard Tube stated that hot-drawn seamless tubes entered under 397(*a*) and the company could see very little reason why one additional operation (cold drawing) should mean a drop in the M.F.N. rate from 22½ p.c. (397(*a*)) to 5 p.c. (398).

Atlas Steels, producing only welded stainless tubing, said it faced the import of seamless tubing in detriment to the purchase of its product. It claimed that welded and seamless are comparable as far as quality is concerned; that seamless and welded pipe sell abroad at very comparable prices; and, since the two types of pipe are competitive, the effective rate of protection for Atlas is really only 5 p.c. under item 398. Page-Hersey also indicated that in some cases it was cheaper to purchase cold-drawn seamless tube in the United States and pay the 5 p.c. duty on it (item 398) than to buy the hot-finished tube and pay 22½ p.c. (item 397(*a*)).

The Canadian Diamond Drilling Association, in objecting to the proposals of the applicants, recommended that all pipes and tubes as used by the Canadian diamond-drilling industry be admitted under item 398 as it now stands. The Association represents contractors, mining companies, and individuals engaged in diamond core drilling in Canada. Members of the Association had, in the past, used tubing produced in Canada but with very unsatisfactory results, Canadian tubes being hard to machine and tolerances not maintained. It estimated that in excess of 1,000,000 feet had been imported in 1955. In addition to objecting to a change in rates, the Association recommended broadening of the item to include welded pipe and pipe with processed ends, for diamond drilling.

Strong objection to any increase was also registered by Boyles Bros. Drilling Co. Ltd. and Midwest Mining Supplies Limited. The former stated it is one of the largest manufacturers of diamond core drills and equipment in the world, with about 30 p.c. of its business in export markets. This company indicated that in a diamond drill hole of 1⅞ inches in diameter, the dimensional tolerances of the various tubes fitting inside one another must be held to a close limit. Dimensional tolerances of Canadian and British tubular products were not suitable, it contended. Midwest Mining also claimed that the Canadian producer does not manufacture all of the sizes required, and recommended no change until such time as Canadian manufacturers are in a position to produce a product equal in every respect to that produced by United States manufacturers. Boyles Bros. went a step further and suggested a special tariff item with rates of Free, Free and 5 p.c. (i.e., reduction in the present M.F.N. rate under item 398).

Page-Hersey reviewed the past history of its sales for diamond-drilling purposes and indicated that it is now in a better position to supply the tubing required; it had acquired new equipment for correcting eccentricity. This company did not believe there is any necessity for a separate tariff item to deal with tubing for drilling purposes.

The upward revision requested by the applicants was strongly opposed by Canadian Oil Company, Limited. The company asked that rates remain unchanged and that wording be broadened to include bevelled-end pipe (i.e., pipes with processed ends). Tube Investments Ltd., of the United Kingdom, stated that the suggested upward increase in rate would cut off United Kingdom exports and would tend to increase costs to Canadian users.

EXISTING TARIFF ITEM 398a

398a: Pipes and tubes of iron or steel, seamless, cold drawn, plain ends, polished, valued at not less than five cents per pound; steel tubes, welded or seamless, more than $10\frac{1}{2}$ inches in diameter, with plain ends, when imported for use exclusively in the manufacture or repair of rolls for paper-making machinery—(s.c. 5193)

Free 15 p.c. 30 p.c.

This tariff item was last revised in 1937 when rolls for paper-making machinery were included, and the M.F.N. rate was reduced from 20 p.c. to 15 p.c.

Production: See item 398.

Imports: Imports, in dollars, in recent years have been as follows:

Year	$
1951	111,963
1952	45,521
1953	35,812
1954	44,151
1955	50,770

In the first four years the United Kingdom accounted for about 75 p.c., the remainder coming from the United States; in 1955, the positions were reversed.

Exports: Not available.

Bound Rates: B.P. rate bound at Free (GATT note);
M.F.N. rate bound at 15 p.c. (GATT—Geneva).

Cross-reference: Recommended Items 3 and 5.

Page-Hersey requested that pipes classifiable under this item be subject to rates as under item 397(a).

The John Inglis Co. Limited, in objecting to such increase in respect of tubes for use in the manufacture or repair of rolls for paper-making machinery, advocated a spread between raw materials and finished product along the lines of the argument which had been used by Page-Hersey in presenting its own case re skelp (i.e., raw materials should enter at a lower rate of duty than the finished product). If Inglis' recommendations as to item 397(a) and (b) were accepted, the company said, it would take no objection to the cancellation of item 398a. Otherwise, the company urged that the *second portion* of item 398a be retained, adding that it would have no objection to the dimensional limitation being increased to 16 inches.

Tube Investments of the United Kingdom indicated that the Page-Hersey request for upward revision would have the effect of reducing the B.P. margin, a matter of vital concern to the United Kingdom company. Seamless stainless tubing was not manufactured in any sizeable quantities in Canada and increased rates of duty would raise the price of an already costly commodity.

EXISTING TARIFF ITEM 398b

398b: Tubing of iron or steel, not joined, not more than $\frac{5}{16}$ inch in diameter, with one end swaged, or swaged, split and spread, but not further manufactured, when imported for use in the manufacture of fishing rods—(s.c. 5194)

Free $7\frac{1}{2}$ p.c. 15 p.c.

This tariff item was created in its present wording in 1937 with rates identical with those currently in force.

Production: Not available.

Imports: Value of imports in 1953, $1,532; in 1954, $4,824; and in 1955, $817.

Exports: Not available.

Bound Rates: Not bound.

Cross-reference: Recommended Item 3.

No objections were made to the request by Page-Hersey that this tubing be made subject to rates under item 397(a). Trade under this item is negligible and no secondary manufacturer expressed interest in its continuance.

EXISTING TARIFF ITEM 398c

398c: Seamless steel tubing, valued at not less than five cents per pound, when imported by manufacturers of roller bearings for use exclusively in the manufacture of such bearings in their own factories—(s.c. 5186)

Free	Free	30 p.c.

This tariff item was established by Order in Council in 1949, continued by a series of subsequent Orders, and written into the tariff in 1952. Wording and rate have remained unchanged.

Production: See item 398.

Imports: Dollar value in recent years has been as follows: 1955, $616,475; 1954, $595,776; and 1953, $422,186.

Exports: Not available.

U.S.A. Duties: Various.

Bound Rates: M.F.N. rate bound at Free to the United States (GATT—Torquay).

Cross-reference: Recommended Item 6.

Different recommendations were advanced by Page-Hersey, Atlas Steels and Standard Tube. Page-Hersey requested rates as under item 397(a), with deletion of the reference to value. Atlas Steels suggested that, if the item is retained, it should provide for higher rates on types made in Canada. Standard Tube stated that there were many problems in supplying a large range of sizes, some in very small quantities, and proposed that the item be divided into "made in Canada" and "not made in Canada" classifications, thus allowing the bearing manufacturers to buy foreign tubing without penalty when the type could not be produced in Canada. The company now had the equipment, it said, to perform the final operations in making the tubing (cold reduction). When pressed to specify the criteria to be used in administering an item such as it proposed, the company was unable to be specific.

Strenuous objection to any change was offered by the bearing manufacturers. The Automotive Parts Manufacturers Association (representing Canadian SKF Company Limited, Fischer Bearings (Canada) Limited, McKinnon Industries Limited, and Timken Roller Bearing Company) recommended that there be no change in rate, but did suggest rewording to provide statutory coverage of the treatment the companies are enjoying in respect of tubing for ball bearings and to remove value demarcation. A total of 6,777 tons of tubing was imported by the users in 1955; in this, there were four different specifications of steel and

more than 200 different sizes. The Association said that had the 22½ p.c. rate suggested by Page-Hersey been in effect in 1955, there would have been an additional cost of $606,297 to the users. Canadian SKF indicated that one-third of a bearing's cost is represented by material (mostly tubing) and that a duty of 22½ p.c. on tubing which must be imported would make the price of its finished product noncompetitive with imports. The rates on finished bearings range from Free to 17½ p.c. SKF claimed that the required tubing is not available from any Canadian source; therefore item 398c should remain without modification as to rate.

Standard Tube indicated that any failure on its part to provide the kind of steel required was the result of misunderstanding and that it was now equipped to make a satisfactory product. Page-Hersey stated that it had not attempted to book orders for this type of tubing and, therefore, said it preferred to leave the tariff item in abeyance until dimensional requirements and tolerances could be discussed with roller bearing manufacturers.

EXISTING TARIFF ITEM 398d: PIPE FOR BUTT-WELDING FITTINGS

398d: Pipe, of steel, seamless, not further manufactured than cut to length and formed or bent to shape, deburred or not; pipe caps, of steel, not further manufactured than formed or bent to shape, deburred or not; for use in the manufacture of butt-welding fittings—(s.c. 5197)

Free	10 p.c.	35 p.c.

This item was established by Order in Council in 1949 and has been continued by a series of Orders the latest being P.C. 1956-7 of January 5, 1956.

Production: See item 398.

Imports: Import tonnage is not available. Value in 1953 was $422,186; in 1954, $594,776; in 1955, $616,475.

Exports: Not available.

U.S.A. Duty: Various.

Bound Rates: Not bound.

Cross-reference: Recommended Item 7.

Page-Hersey Tubes, Limited requested that pipe in its natural state—as coming from a pipe mill—should not be included in this item but should be classified under item 397(a). Manufacturers of fittings did not appear to object to exclusion from this item of pipe in straight lengths, but stressed the desirability of an amended wording that would include bent pipe.

EXISTING TARIFF ITEM 398e: HOLLOWS

398e: Hot rolled steel hollows for use in the manufacture of cold reduced seamless steel tubes—(s.c. 5188)

Free	Free	30 p.c.

This item was established by Order in Council in January 1955.

Production: See item 398.

Imports: Import totals are not separately available.

Exports: Not available.

U.S.A. Duty: Ranges from 7/20 of a cent per pound to 7/8 of a cent per pound on smaller diameters; 11½ p.c. on pipe n.s.p.

Bound Rates: Not bound.

Cross-reference: Recommended Item 3.

This temporary item was established for Standard Tube and T.I. Limited when that company was installing machines for the production of cold-reduced seamless steel tubing. The company now plans to develop Canadian sources for its raw materials and considers some protection would be in order for its Canadian suppliers; it suggested Free (M.F.N.) on materials not made, and, 5 p.c. (M.F.N.) on materials made.

Page-Hersey preferred deletion of the item, the applicable rates then being those of 397(a) ($22\frac{1}{2}$ p.c. M.F.N.). This company stated it cannot make hollows competitively under free importation and the rate suggested by Standard Tube completely sets aside any possibility of Page-Hersey's hot-rolled seamless mill being able to provide Standard Tube with hot-rolled seamless tubing (so-called hollows) for cold reducing to smaller sizes and thinner walls. It also pointed out that Standard Tube's cold-reduced products compete with Page-Hersey cold-drawn products and that the rates suggested by Standard Tube would give that company a competitive advantage.

EXISTING TARIFF ITEM 399: PRESSURE PIPE

399: Pipes, tubes and flues, of wrought iron or steel, with plain, swelled or thickened ends, when imported for use exclusively in the manufacture or repair of pressure parts of boilers, pulp mill digesters and vessels for the refining of oil, under regulations prescribed by the Minister—(s.c. 5183)

Free	Free	Free

This tariff item was created in its present wording and with identical rates in 1930.

Production: Has been small in relation to total consumption. In 1953, Canadian production amounted to 580 tons; in 1954, 764 tons and in 1955, 1,850 tons.

Imports: In 1953, imports totalled $3,088,667; in 1954, $2,678,800 and in 1955, $3,048,355.

Exports: Not available.

U.S.A. Duties: 7/20 of a cent per pound to 7/8 of a cent per pound on smaller diameters; $11\frac{1}{2}$ p.c. n.s.p.

Bound Rates: Not bound.

Cross-reference: Recommended Item 4.

Page-Hersey Tubes, Limited stated that its seamless pipe mill was installed in 1932 but was not utilized to any appreciable extent until the war years, when it supplied the bulk of Canadian needs. Following the war, imported seamless pipe was again available at prices with which Page-Hersey could not compete. With the outbreak of hostilities in Korea, however, the seamless mill once again was called upon for large scale production. This demand, however, has subsided and once again output is on a limited scale. Page-Hersey requested that a tariff increase be recommended, in order to permit it to maintain a reasonable level of operation in its seamless mill. It therefore requested that item 399 be deleted; or, alternatively, that it be retained with rates equivalent to those applying to item 397(a). Atlas Steels, Limited and Standard Tube and T.I. Limited supported this proposal. Standard Tube indicated that it was able to manufacture boiler tubes in a range of sizes sufficient to take care of a large portion of Canadian requirements but because of the prevailing free entry it enjoyed only a very small part of the total Canadian business.

Canadian Oil Companies, Limited strongly opposed any change which would have the effect of increasing the duty on the products they imported under this tariff item and recommended continuing free entry and an extension of the item to cover alloy steel tubes. The Canadian Petroleum Association subscribed to the brief of Canadian Oil Companies, Limited but in addition asked that wording be revised to include tubes for the vessels used in the processing of natural gas. The British American Oil Company Limited, during 1955, imported steel pipes and tubes valued at $245,470.36, consisting entirely of seamless pipes and tubes not made in Canada and admissible free of duty under tariff item 399 or 848(1). These users asserted that the rates of duty proposed would not result in any advantage to Canadian producers of welded pipe; they therefore recommended continued free entry. A similar argument was advanced by Imperial Oil Limited with particular reference to duty-free entry for alloy steel pipe.

The John Inglis Co. Limited quoted prices from a Toronto distributor, showing that the laid-down cost of welded tubes was lowest from the United Kingdom, followed in order by Canadian and United States material; on seamless the pricing levels were, the United Kingdom lowest, then the United States and Canadian pipe. Since the company believed that the Canadian pipe and tube industry is entitled to a proper measure of tariff protection, it suggested rates of duty of 5, 10 and 20 p.c., which should provide adequate protection on the basis of the aforementioned price levels; while the B.P. rate would not fully cover the difference in laid-down cost, it had not always been tariff policy to provide full protection against imports from Commonwealth nations. In addition, the company requested that the tariff item be reworded to exclude bent tubes since several of the Canadian boiler manufacturers have tube bending machines. As well, there should be deletion of "repair", as boilers are repaired in the field and the competitive position is different from that in the production of new boilers. This company said that, if its proposals regarding 397(a) and (b), were accepted it would not object to the cancellation of 399.

Stewarts and Lloyds, Limited of the United Kingdom indicated that the Canadian market is one of the company's largest single export markets for boiler tubes, and it was opposed to any increase in rates of duty which would tend to limit its ability to participate in the Canadian market. The B.P. rate of 15 p.c. suggested by the applicants would be a severe handicap, and might be prohibitive. Tube Investments also stressed the prohibitive nature of an increase in the B.P. rate from Free to 15 p.c. Some of the company's products entering under this item were not produced in Canada in commercial quantities.

The Babcock & Wilcox Company of Pittsburgh suggested that separate treatment should be given to seamless tubes and welded tubes. Seamless carbon and seamless alloy grades cannot be economically produced in Canada, and by implication the company suggested that these could more easily be given preferential treatment if separated from welded tubes. Standard Tube countered with the statement that it could produce both welded and seamless tubes and could see no reason for differentiation between seamless and welded. Page-Hersey and Stewarts and Lloyds also stated that there was no reason for differentiation.

EXISTING TARIFF ITEM 399a: PIPES FOR BEDS

399*a*: Pipes and tubes, of wrought iron or steel, brass covered, not more than 3 inches in diameter, and brass trimmings, not polished, lacquered or otherwise manufactured, when imported by manufacturers of iron or brass bedsteads for use exclusively in the manufacture of iron or brass bedsteads, in their own factories, under regulations prescribed by the Minister —(s.c. 5184)

Free	Free	Free

This item was created in its present wording and with identical rates in 1930.

Production: Not available.

Imports: Nil in recent years.

Exports: Not available.

U.S.A. Duties: 7/20 of a cent per pound to $\frac{7}{8}$ of a cent per pound on products of smaller diameter; 11½ p.c. n.s.p.

Bound Rates: Not bound.

Cross-reference: Recommended Item 3.

No objection was made by anyone to the request by Page-Hersey Tubes, Limited that this item be deleted.

EXISTING TARIFF ITEM 399b: TUBING, COATED FOR FURTHER PROCESSING

399*b*: Tubing, of wrought iron or steel, not more than one-half inch in diameter, in lengths not less than six feet, coated with metal, other than zinc, not polished, bent nor further manufactured, when imported by manufacturers to be further processed, in their own factories—(s.c. 5190)

Free	7½ p.c.	7½ p.c.

This item was established in its present wording and with identical rates, in 1930.

Production: Nil.

Imports: Small in relation to the overall trade in pipes and tubes. Value in recent years has been as follows:

Year	$
1953	173,209
1954	151,067
1955	247,288

Exports: Not available.

U.S.A. Duties: 7/20 of a cent per pound to $\frac{7}{8}$ of a cent per pound on smaller diameters; 11½ p.c. n.s.p.

Bound Rates: Not bound.

Cross-reference: Recommended Item 3.

No objection was made to the proposal by Page-Hersey Tubes, Limited that this item be deleted. No interest in the item was expressed by anyone.

EXISTING TARIFF ITEM 399c: PIPES OF PUDDLED IRON

399*c*: Pipes and tubes, not exceeding two inches in diameter, made from puddled iron, when for use exclusively in recovering crude petroleum—(s.c. 5195)

Free	Free	Free

This item was created in its present wording with identical rates, in 1930.

Production: Not available.

Imports: Not available.

Exports: Not available.

U.S.A. Duties: Various.

Bound Rates: Not bound.

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Cross-reference: Recommended Item 3.

No objection was offered to the request made by Page-Hersey Tubes, Limited for deletion. The item apparently is obsolete.

EXISTING TARIFF ITEM 400: FITTINGS

400: Fittings and couplings of iron or steel, of every description, for iron or steel pipes and tubes; complete parts thereof—(s.c. 5192 and 5196)

	20 p.c.	$27\frac{1}{2}$ p.c.	30 p.c.
GATT		$22\frac{1}{2}$ p.c.	

This item was created in 1930, with a revision in 1936 to include the word "fittings" and the phrase "complete parts thereof". Rates are the same except for the GATT reduction which became effective in January, 1948.

Production: Canadian producers have supplied the greater part of Canadian consumption. Production has been as follows:

Year	*Tons of 2,000 Pounds*
1951	51,450
1952	40,970
1953	43,420
1954	43,050
1955	53,569

Imports: Tonnage data are not available in respect of imports during recent years. Values have been as follows:

Year	$
1951	4,862,059
1952	6,866,148
1953	6,448,469
1954	5,917,650
1955	6,482,187

While imports are represented by sizable dollar values, it would appear that in terms of tonnage they would not represent more than 15 p.c. of total Canadian consumption.

Exports: Exports have been negligible in relation to total Canadian production. The value of fittings exported in 1953 was $326,272; in 1954, $237,550; and in 1955, $268,714.

U.S.A. Duties: Cast iron fittings, 10 p.c.; malleable fittings for cast iron pipe, $22\frac{1}{2}$ p.c.; other, 21 p.c.

Bound Rates: B.P. rate bound at 20 p.c. (GATT note); M.F.N. rate bound at $22\frac{1}{2}$ p.c. to the United States (GATT—Geneva).

Cross-reference: Recommended Items 2 and 3.

Canadian Coupling & Fittings, Limited, Ladish Co. of Canada Ltd., Page-Hersey Tubes, Limited, and Tube Turns of Canada Limited requested retention of the item as it now stands. Taylor Forge withdrew the representations it had made during the public hearings and subsequently submitted a request that item 400 be rewritten as follows:

(*a*) finished products, dutiable at $22\frac{1}{2}$ p.c. (B.P. and M.F.N.)

(*b*) semi-finished products, within the range the company manufactures in Canada, dutiable at $22\frac{1}{2}$ p.c. (B.P. and M.F.N.)

(*c*) semi-finished products, beyond the range the company manufactures in Canada, dutiable at 10 p.c. (B.P. and M.F.N.).

United Kingdom producers took exception to the reduction in the margin of British Preference.

Objection to the proposals of the producers was advanced by the Canadian Petroleum Assocation which indicated that couplings and fittings should be included with their respective pipe items, as these represented something like 5 p.c. of the total cost of oil-country pipe; in connection with "down-hole" tubular products, price quotations always included the cost of the coupling.

EXISTING TARIFF ITEM 410b

410b: Machinery and apparatus for use exclusively in washing or dry cleaning coal at coal mines or coke plants; machinery and apparatus for use exclusively in producing coke and gas; machinery and apparatus for use exclusively in the distillation or recovery of products from coal tar or gas; and complete parts of all the foregoing, not to include motive power, tanks for gas, nor pipes and valves 10½ inches or less in dameter—

Free	10 p.c.	12½ p.c.

This item was established in its present wording in 1930. The B.P. rate was reduced from 7½ p.c. to Free in 1937.

Production: Not available.

Imports: Not available.

Exports: Not available.

U.S.A. Duty: Not available.

Bound Rates: B.P. rate bound at Free (GATT note); M.F.N. rate bound at 10 p.c. to the United States (GATT—Geneva).

Cross-reference: Recommended Item 8.

Page-Hersey requested that this item be so reworded that pipe of a size made in Canada would automatically be excluded.

Stelco, as a user of pipes in coal-cleaning operations etc., while not opposed to the suggestion, pointed out that Page-Hersey had argued there should be no more than a 5 p.c. duty on Page-Hersey's raw materials (skelp and billets); the present rate under this tariff item is 10 p.c. on the materials used by Stelco.

General objection was registered by the Canadian Petroleum Association, with comments as applicable under item 397. In recommending that the diameter remain at 10½ inches, the Association did not agree to a "made in Canada" expression based on diameter.

EXISTING TARIFF ITEM 410d

410d: Well-drilling machinery and apparatus, and complete parts thereof, for use exclusively in drilling for water, natural gas or oil, or in prospecting for minerals, not to include motive power; machinery and apparatus of a class or kind not made in Canada for maintenance and testing purposes in connection with gas or oil wells; well-packers and complete parts thereof, for oil or gas wells; seamless iron or steel tubing of a class or kind not made in Canada, for use in casing water, natural gas or oil wells—

Free	Free	Free

Production: Not available.

Imports: Not available.

Exports: Not available.

U.S.A. Duty: Not available.

Bound Rates: B.P. rate bound at Free (GATT note); M.F.N. rate bound at Free to the United States (GATT—Geneva).

Cross-reference: Recommended Items 9 and 12.

The parties presenting evidence at the public hearings were agreed that tariff item 848(1) had replaced 410d in so far as pipes, tubes and casing for use with oil and gas wells are concerned. In connection with such products used for water wells, Page-Hersey Tubes, Limited produces most of the sizes used and they are therefore not admissible under item 410d. As a consequence, it seemed generally agreed that item 410d is largely inoperative. The only specific objection was that recorded by Canadian Oil Companies, Limited, which opposed any change that would increase the present rates of duty. The company claims to be a user of pipe that enters under this tariff item.

EXISTING TARIFF ITEM 410g

410g: Articles for use exclusively in the metallurgy or smelting of iron, viz.: machinery and apparatus for sintering or nodulizing iron ore, concentrated or not, or flue dust; machinery and apparatus for use exclusively in the construction, equipment and repairs of blast furnaces for smelting iron ore, such machinery and apparatus to include hot blast stoves and burners, blast piping and valves connecting the blowing engines with the furnace, scale cars, charging and hoisting apparatus, blast furnace gas piping, cleaners and washers; and parts of all the foregoing, but not to include wrought iron pipe or valves $10\frac{1}{2}$ inches and under in diameter, nor structural iron work.

Free	5 p.c.	5 p.c.

This item was last revised as to wording in respect of wrought iron pipe in 1930 at which time the range was extended from 8 inches to $10\frac{1}{2}$ inches. The rate has remained unchanged.

Production: Not available.

Imports: Not available.

Exports: Not available.

U.S.A. Duty: Not available.

Bound Rates: Not bound.

Cross-reference: Recommended Item 10.

Page-Hersey Tubes, Limited requested rewording that would exclude, on a continuing basis, pipe of a diameter made in Canada. The Canadian Petroleum Association did not make any specific reference to this item but as part of its general contention regarding any tariff item where coverage was to be broadened indicated a doubt as to justification. As well, the Association questioned "made in Canada" based on diameter.

EXISTING TARIFF ITEM 410p

410p: Sundry articles of metal as follows, for use exclusively in metallurgical operations, namely: furnaces for the smelting of ores; converting apparatus for metallurgical processes in metals; apparatus for chemical conversion, extraction, reduction or recovery, n.o.p.; machinery for the extraction of precious metals by the chlorination or cyanide processes, not including pumps, vacuum pumps or compressors; blast furnace blowing engines for the production of pig iron; parts of the foregoing

Free Free Free

A ruling of the Department of National Revenue, Customs and Excise Division, indicates that rubber-lined steel pipe when fabricated to specification ready for installation in uranium processing plants and used exclusively for purposes of conveying leeching fluids in Ion Exchange Systems in connection with the recovery of uranium by the leeching process is entitled to entry under this tariff.

Production: Not available.

Imports: Not available.

Exports: Not available.

U.S.A. Duty: Not available.

Bound Rates: Not bound.

The application of Dunlop Canada Limited for amendment of this item so as to exclude rubber-lined pipe for use in uranium processing plants was not opposed. There are at least five Canadian companies producing pipe for this purpose and the industry possesses sufficient manufacturing capacity and technical ability to provide a comprehensive and efficient service. The exclusion of rubber-lined pipe from 410p would provide a measure of tariff protection. It will be noted, however, that the item makes no reference in terms of pipes or tubes and for that reason may not be within the Board's terms of reference.

EXISTING TARIFF ITEM 410z

410z: Machinery and apparatus, n.o.p., and parts thereof, for the recovery of solid or liquid particles from flue or other waste gases at metallurgical or industrial plants, not to include motive power, tanks for gas, nor pipes and valves $10\frac{1}{2}$ inches or less in diameter.

5 p.c. 10 p.c. $12\frac{1}{2}$ p.c.

This item was established in its present wording in 1930. The B.P. was reduced from $7\frac{1}{2}$ p.c. to 5 p.c. in 1937.

Production: Not available.

Imports: Not available.

Exports: Not available.

U.S.A. Duty: Not available.

Bound Rates: Not bound.

Cross-reference: Recommended Item 11.

Representations by Page-Hersey Tubes, Limited were for rewording of this item in such manner as automatically to exclude pipe of a diameter made in Canada. There were no specific objections other than the general opposition advanced by the Canadian Petroleum Association with regard to the extension of coverage and the use of "made in Canada" based on diameter.

848(1): All machinery and apparatus and parts thereof (including motive power) and drilling mud, for use exclusively in exploratory or discovery work in connection with, and development, depletion and production of petroleum or natural gas wells; seamless, lapwelded and electric welded iron or steel casing, tubing and drill pipe for use in connection with natural gas or oil wells—(s.c. 5195)

Free Free Free

This item became effective in 1944.

Production: It is not possible to ascertain statistics for total domestic production classifiable under this item. Figures are available, however, for casing, one of the most important products under this item.

Casing—Canadian Production

Year	*Tons of 2,000 Pounds*
1950	1,037
1951	472
1952	12,370
1953	1,043
1954	——
1955	193
1956 (10 months)	10,148

Imports: Exact figures for imports under item 848(1) are not available. The following in terms of value, are thought to be reasonably accurate:

Year	$
1950	6,761,909
1951	13,817,249
1952	13,050,636
1953	16,689,450
1954	18,525,049
1955	19,863,704

Imports of casing, by tonnages, were as follows:

Year	*Tons of 2,000 Pounds*
1950	33,648
1951	70,323
1952	73,212
1953	95,617
1954	98,583
1955	91,833
1956 (8 months)	103,624

It can be seen that imports greatly exceed domestic production.

Exports: Nil.

U.S.A. Duty: $7\frac{1}{2}$ p.c.

Bound Rates: Not bound.

Cross-reference: Recommended Items 12(1), (3).

Page-Hersey Tubes, Limited requested rewording of item 848(1) to provide duty-free entry for only casing and tubing more than 16 inches in diameter or more than such other larger diameter as may be made in Canada in the future—casing and tubing of a diameter made in Canada would, therefore, be dutiable under the company's proposals at 22½ p.c. (M.F.N.). This company stated that it cannot meet import prices without tariff protection. Since its prices are higher, it can obtain orders only during periods of shortage. However, the company claimed that it could produce from 80,000 to 90,000 tons of seamless tubing or casing per annum if it had adequate protection.

The Mannesmann Tube Company, Ltd., building a plant at Sault Ste. Marie for completion by early 1957, also requested rewording of 848(1) to exclude items made in Canada. The company said it will be working primarily to serve the petroleum industry and by June of 1958 would have a full range of sizes, grades and weights in everything but drill pipe. Annual capacity would be 225,000 tons of seamless hot-rolled pipe in the size range 4½ inches to 10¾ inches, O.D. About 60 p.c. of initial production would probably be oil-well casing. The company preferred not to make precise recommendations regarding rates of duty since it had no Canadian production experience on which to base a recommendation.

The Canadian Petroleum Association strenuously objected to the changes suggested by the applicant companies. Objections were entered also by The British American Oil Company Limited, Canadian Oil Companies, Limited, and Imperial Oil Limited. A survey of the Canadian Petroleum Association's membership showed that drillers and producers preferred seamless oil-country tubular goods in almost every instance. Seamless tubing had been available from a Canadian source only up to 7 inches O.D. The proposals of the applicants would have the effect of putting the greater part of tubing imports under item 397 (22½ p.c., M.F.N.). If the increase suggested by the applicants were granted it would mean, the Association stated, an average increase in cost of $3,200 per well: in the Pembina field alone, some 4,000 to 5,000 wells were to be drilled and the rate increase would mean an additional cost of between $9,600,000 and $12,800,000. The Association said that increases in cost might retard the development of Canadian resources since other competitive sources of oil are available. Gas producers were not in a position to pass on increased costs to the consumer; firm prices had been set by contract with the pipeline companies and the producers would be forced to absorb any increase in cost. Also, lower profits might serve to curtail future investment. In rebuttal, Page-Hersey claimed that increased costs would be in capital costs, partially if not wholly recoverable through tax savings by higher depreciation write-offs. Page-Hersey claimed that at the present time Canada was the only one of fifty countries having oil reserves that did not levy a duty on oil-country tubular goods. The company also challenged the statement that Canadian mills could not meet demand for casing. Mannesmann Tube stressed increased availability when its plant comes into operation.

Imperial Oil Limited while opposing in general terms increases in duties on oil-country goods, indicated that, if some duty were warranted, a more moderate rate (perhaps, 10 p.c. M.F.N.) should be adequate to protect such tubular goods as may be made in Canada.

Two United Kingdom producers entered their objections to the proposals of the applicants. Stewarts and Lloyds stated that recent agreed (freight) charges negotiated by Page-Hersey on oil-well casing had had the effect of reducing the laid-down price of Page-Hersey's casing by 95 cents per 100 pounds or $19.00 per ton. Such reduction had the same relative effect on United Kingdom exports as the imposition of a 12 p.c. duty.

Considerable discussion developed in connection with the matter of interchangeability. The Canadian Petroleum Association indicated that its members did not subscribe to the suggestion that welded and seamless tubing or casing are interchangeable. British American Oil stated that seamless casing and tubing was a necessity, to prevent collapse where high pressures were to be expected. This firm claimed that since welded pipe cannot be substituted for seamless, the application of a duty would not result in any advantage to Page-Hersey in the sizes over 7 inches in diameter. Imperial Oil also stressed that the two products were not in its opinion interchangeable. The Association further stated that the industry as a whole was unwilling to accept a product technically unsuitable for its needs when other products in the world markets more nearly met the requirements of the industry in a safe and economic manner and in keeping with provincial regulations (for example, welded tubing may not be used in deep wells in Alberta, by order of the provincial Conservation Board). The Association said it is resorted to only in relatively shallow wells and would constitute something like 10 to 15 p.c. of the total casing used. The Association's comments were supported by the evidence of a technical witness.

Further, the Canadian Petroleum Association indicated that it could not agree to a "made in Canada" distinction based solely on diameter. Grade, weight and quality were of extreme importance and it might very well be that while pipe of a diameter desired was made in Canada, the other specifications would not meet requirements. In this connection certain grades were available only from United States and United Kingdom sources, and producers of such specialty items provided supplies in fixed proportion to the quantities of volume pipe purchased by the customer. This evidence was confirmed by Stewarts and Lloyds of the United Kingdom.

Couplings have been admissible under 848 even though not specified, and in the interests of clarification the Canadian Petroleum Association requested that suitable rewording be undertaken. This proposal was in opposition to the request of Canadian Coupling and Fittings, which stressed that it was equipped to manufacture all sizes of couplings for tubings and casings up to those for 7-inch O.D. casing; thus far, it had had no incentive to undertake such production. It requested that the sizes it can produce be excluded from free entry under item 848.

Imperial Oil Limited requested that the revision of 848 should be such as to leave no doubt concerning the continuation of duty-free status of drill pipe. Page-Hersey was in agreement. Mannesmann indicated that its company would be producing drill pipe sometime after 1958.

848(2): Machinery and apparatus and parts thereof (including motive power) of a class or kind not made in Canada and drilling mud, for use in the exploration, discovery, development and operation of potash and rock salt mines or for use in the production of muriate of potash, or for use in the production of crushed and screened rock salt

Free	Free	Free

This item was created in its present wording and with identical rates, in 1954.

Production: Not available.

Imports: Not available.

Exports: Not available.

U.S.A. Duty: Various.

Bound Rates: Not bound.

Cross-reference: Recommended Item 12(2).

No objection was offered to the request made by Page-Hersey Tubes, Limited that this item be deleted, or reworded so as to provide rates equal to those under 397(*a*). No interest in the item, in so far as concerns pipe and tubes, was manifested by anyone.

848(3): Seamless, lapwelded and electric welded iron or steel casing, tubing and drill pipe, of a class or kind not made in Canada, for use in the exploration, discovery, development and operation of potash and rock salt mines or for use in the production of muriate of potash, or for use in the production of crushed and screened rock salt

Free	Free	Free

This item was created in its present wording and with identical rates, in 1954.

Production: Not available.

Imports: Not available.

Exports: Not available.

U.S.A. Duty: Various.

Bound Rates: Not bound.

Cross-reference: Recommended Item 3.

Page-Hersey Tubes, Limited requested rewording to exclude casing and tubing of a diameter made in Canada. There was no specific objection, although the Canadian Petroleum Association disagreed with "made in Canada" based on diameter only. Otherwise, no interest in the item was manifested by anyone.

848(4): Materials for use in the manufacture of the goods enumerated in (1), (2) and (3) of this item

Free	Free	Free

This item was created in its present wording and with identical rates, in 1954.

Production: Not available.

Imports: Not available.

Exports: Not available.

U.S.A. Duty: Various.

Bound Rates: Not bound.

Cross-reference: Various.

Page-Hersey's recommendations with regard to 848(1), (2) and (3) would require no change in 848(4) since it would not apply to the company's products. The Canadian Petroleum Association also suggested no change, since it would like 848(4) to continue should its 848(1) recommendation be accepted.

EXISTING DRAWBACK ITEM 1017: LAPWELDED CASING

1017: Lapwelded tubing of iron or steel, not less than four inches in diameter, threaded and coupled or not; iron or steel couplings therefor and complete parts of such couplings—When used in casing water, oil and natural gas wells, or for the transmission of natural gas under high pressure from gas wells to points of distribution ....Drawback of 50 p.c.

This item was last revised in 1936.

No drawback has been paid under this item since 1953-54. Lapwelded casing is apparently of declining importance and of little or no interest to the petroleum industry. Page-Hersey recommended deletion and no strenuous objection was registered.

EXISTING DRAWBACK ITEMS 1018 and 1018a: LINE PIPE

1018: Seamless iron or steel tubing over four inches in diameter; iron or steel couplings therefor and complete parts of such couplings—When used in the transmission of natural gas under high pressure from the gas wells to points of distribution .. Drawback of 50 p.c.

This item was last revised in 1936. Drawback paid over the past five years has been as follows:

Year	$
1951-52	37,610.96
1952-53	79,653.11
1953-54	32,439.30
1954-55	47,802.92
1955-56	37,854.11

1018a: Electric-welded pipe of iron or steel, more than sixteen inches in diameter, iron or steel couplings therefor and complete parts of such couplings—When used in the transmission of natural gas under high pressure to points of distribution .... Drawback of 50 p.c.

With regard to both 1018 and 1018a, Page-Hersey suggested deletion or rewording so that drawback would apply only to pipe of a diameter larger than that made in Canada. Page-Hersey claimed that it needed the full protection of the rates of duty named in its proposals for 397(a) and (b). The company could point to many instances where it had been impossible to compete with imports (under drawback) even though it sold its pipe at cost.

The Canadian Petroleum Association stated that with Trans-Canada and Westcoast Transmission preparing to provide gas to many urban centres across Canada, there would be an increase in pipeline requirements. Believing Canadian mills would not be able to meet the demand, the Association recommended that the drawback features be retained and expanded to cover *all* line pipe. This latter recommendation brought an objection from Standard Tube and T.I. in the form of a statement supporting Page-Hersey's brief.

Trans-Canada Pipe Lines Limited raised strong objection to Page-Hersey's proposal, claiming that elimination of the drawback and the increase in rate (as proposed under 397(a) and (b), would amount to a 300 p.c. increase in the effective rates that now exist. (See tariff item 397(b) for argument.) In a counter-proposal, this company suggested (*a*) an increase in drawback to 99 p.c., and (*b*) a modification of wording for the sake of clarity.

South Durham Steel & Iron Co. Ltd., favoured retention of the drawback items for reasons as advanced under 397(b). Stewarts and Lloyds also supported retention of drawback items and indicated interest in seeing the amount of drawback increased. This company had certain customers in Canada who preferred seamless pipe for the transmission of gas, and since they could not buy Canadian-made seamless pipe in all sizes up to 16 inches, they would be importing at a higher cost should the Page-Hersey proposals be accepted.

1028: Steel billets—When used in the manufacture of the seamless pipes, tubes and flues enumerated in tariff items 399 and 410(d) ...... Drawback of 99 p.c.

This Drawback item has been unamended in wording and rate since 1930. Because of the fact that boiler tubes, etc. were duty-free under tariff item 399, and (certain) seamless casing and tubing (oil-country goods) were duty-free under tariff item 410d, Drawback Item 1028 was created to provide entry duty-free of billets to be used in the manufacture in Canada of such boiler tubes, pressure tubes, casing, etc. Although in most of the intervening 25 years, the item has been little used (with drawback running as low as a few hundred dollars), advantage was taken of it in the year preceding the opening of World War II, to the extent of about twenty-six thousand dollars. The average drawback paid over a long period might be in the neighborhood of $6,000-$8,000.

At the public hearings it was contended by at least one manufacturer (Page-Hersey) that, if unsuccessful in securing the imposition of duties on the tubes and casing above referred to, he should still have access to the provisions of this drawback.

APPENDICES

TO THE

REPORT OF THE TARIFF BOARD

ON

REFERENCE No. 119

82676—9

List of Tariff Items Relating to Pipes and Tubes of Iron or Steel
Reference No. 119

Following are the tariff items, *as at present in the Customs Tariff,* which have been the subject of representations before the Board in connection with the above-named Reference:

Item	Wording	Rates of Duty B.P.	M.F.N.	Gen.
355b	—Metal alloy strip or tubing, containing not less than thirty per cent by weight of nickel and twelve per cent by weight of chromium, for use in Canadian manufactures	Free	Free	20 p.c.
396	—Pipe, cast, of iron or steel, valued at not more than five cents per pound........per ton	$5.00	$12.00	$14.00
396a	—Pipe, cast, of iron or steel, n.o.p.	Free	7½ p.c.	10 p.c.
397	—Pipes and tubes, of wrought iron or steel, plain or coated:—			
	(a) Welded or seamless, with plain or processed ends, not more than 10½ inches in diameter, n.o.p.	15 p.c.	27½ p.c.	30 p.c.
	GATT		22½ p.c.	
	(b) Welded or seamless, with plain or processed ends, more than 10½ inches in diameter, n.o.p.	10 p.c.	15 p.c.	20 p.c.
	(c) Not joined, with plain ends, not more than 2½ inches in diameter, n.o.p.	5 p.c.	10 p.c.	15 p.c.
	(d) N.o.p.	12½ p.c.	27½ p.c.	30 p.c.
	GATT		15 p.c.	
398	—Pipes and tubes, of steel, seamless, cold drawn, plain ends, valued at not less than five cents per pound, n.o.p.	Free	5 p.c.	5 p.c.
398a	—Pipes and tubes of iron or steel, seamless, cold drawn, plain ends, polished, valued at not less than five cents per pound; steel tubes, welded or seamless, more than 10½ inches in diameter, with plain ends, when imported for use exclusively in the manufacture or repair of rolls for paper-making machinery	Free	15 p.c.	30 p.c.
398b	—Tubing of iron or steel, not joined, not more than 5/16 inch in diameter, with one end swaged, or swaged, split and spread, but not further manufactured, when imported for use in the manufacture of fishing rods	Free	7½ p.c.	15 p.c.
398c	—Seamless steel tubing, valued at not less than five cents per pound, when imported by manufacturers of roller bearings for use exclusively in the manufacture of such bearings in their own factories	Free	Free	30 p.c.
398d	—Pipe, of steel, seamless, not further manufactured than cut to length and formed or bent to shape, deburred or not; pipe caps, of steel, not further manufactured than formed or bent to shape, deburred or not; for use in the manufacture of butt-welding fittings	Free	10 p.c.	35 p.c.
398e	—Hot rolled steel hollows for use in the manufacture of cold reduced seamless steel tubes	Free	Free	30 p.c.
399	—Pipes, tubes and flues, of wrought iron or steel, with plain, swelled or thickened ends, when imported for use exclusively in the manufacture or repair of pressure parts of boilers, pulp mill digesters and vessels for the refining of oil, under regulations prescribed by the Minister	Free	Free	Free

Item	Wording	Rates of Duty B.P.	M.F.N.	Gen.
399a	—Pipes and tubes, of wrought iron or steel, brass covered, not more than 3 inches in diameter, and brass trimmings, not polished, lacquered or otherwise manufactured, when imported by manufacturers of iron or brass bedsteads for use exclusively in the manufacture of iron or brass bedsteads, in their own factories, under regulations prescribed by the Minister	Free	Free	Free
399b	—Tubing, of wrought iron or steel, not more than one-half inch in diameter, in lengths not less than six feet, coated with metal, other than zinc, not polished, bent nor further manufactured, when imported by manufacturers to be further processed, in their own factories	Free	7½ p.c.	7½ p.c.
399c	—Pipes and tubes, not exceeding two inches in diameter, made from puddled iron, when for use exclusively in recovering crude petroleum	Free	Free	Free
400	—Fittings and couplings of iron or steel, of every description, for iron or steel pipes and tubes; complete parts thereof	20 p.c.	27½ p.c.	30 p.c.
	GATT		22½ p.c.	
410b	—Machinery and apparatus for use exclusively in washing or dry cleaning coal at coal mines or coke plants; machinery and apparatus for use exclusively in producing coke and gas; machinery and apparatus for use exclusively in the distillation or recovery of products from coal tar or gas; and complete parts of all the foregoing, not to include motive power, tanks for gas, nor pipes and valves 10½ inches or less in diameter	Free	10 p.c.	12½ p.c.
410d	—Well-drilling machinery and apparatus, and complete parts thereof, for use exclusively in drilling for water, natural gas or oil, or in prospecting for minerals, not to include motive power; machinery and apparatus of a class or kind not made in Canada for maintenance and testing purposes in connection with gas or oil wells; well-packers and complete parts thereof, for oil or gas wells; seamless iron or steel tubing of a class or kind not made in Canada, for use in casing water, natural gas or oil wells	Free	Free	Free
410g	—Articles for use exclusively in the metallurgy or smelting of iron, viz.: machinery and apparatus for sintering or nodulizing iron ore, concentrated or not, or flue dust; machinery and apparatus for use exclusively in the construction, equipment and repairs of blast furnaces for smelting iron ore, such machinery and apparatus to include hot blast stoves and burners, blast piping and valves connecting the blowing engines with the furnace, scale cars, charging and hoisting apparatus, blast furnace gas piping, cleaners and washers; and parts of all the foregoing, but not to include wrought iron pipe or valves 10½ inches and under in diameter, nor structural iron work	Free	5 p.c.	5 p.c.
410p	—Sundry articles of metal as follows, for use exclusively in metallurgical operations, namely: furnaces for the smelting of ores; converting apparatus for metallurgical processes in metals; apparatus for chemical conversion, extraction, reduction or recovery, n.o.p.; machinery for the extraction of precious metals by the chlorination or cyanide processes, not including pumps, vacuum pumps or compressors; blast furnace blowing engines for the production of pig iron; parts of the foregoing	Free	Free	Free

Item	Wording	Rates of Duty B.P.	M.F.N.	Gen.
410z	—Machinery and apparatus, n.o.p., and parts thereof, for the recovery of solid or liquid particles from flue or other waste gases at metallurgical or industrial plants, not to include motive power, tanks for gas, nor pipes and valves $10\frac{1}{2}$ inches or less in diameter......	5 p.c.	10 p.c.	$12\frac{1}{2}$ p.c.
848	—(1) All machinery and apparatus and parts thereof (including motive power) and drilling mud, for use exclusively in exploratory or discovery work in connection with, and development, depletion and production of petroleum or natural gas wells; seamless, lapwelded and electric welded iron or steel casing, tubing and drill pipe for use in connection with natural gas or oil wells......	Free	Free	Free
	(2) Machinery and apparatus and parts thereof (including motive power) of a class or kind not made in Canada and drilling mud, for use in the exploration, discovery, development and operation of potash and rock salt mines or for use in the production of muriate of potash, or for use in the production of crushed and screened rock salt......	Free	Free	Free
	(3) Seamless, lapwelded and electric welded iron or steel casing, tubing and drill pipe, of a class or kind not made in Canada, for use in the exploration, discovery, development and operation of potash and rock salt mines or for use in the production of muriate of potash, or for use in the production of crushed and screened rock salt......	Free	Free	Free
	(4) Materials for use in the manufacture of the goods enumerated in (1), (2) and (3) of this item......	Free	Free	Free

Item			Drawback of Duty
1017	—Lapwelded tubing of iron or steel, not less than four inches in diameter, threaded and coupled or not; iron or steel couplings therefor and complete parts of such couplings.	When used in casing water, oil and natural gas wells, or for the transmission of natural gas under high pressure from gas wells to points of distribution......	50 p.c.
1018	—Seamless iron or steel tubing over four inches in diameter; iron or steel couplings therefor and complete parts of such couplings.	When used in the transmission of natural gas under high pressure from the gas wells to points of distribution......	50 p.c.
1018a	—Electric-welded pipe of iron or steel, more than sixteen inches in diameter, iron or steel couplings therefor and complete parts of such couplings.	When used in the transmission of natural gas under high pressure to points of distribution......	50 p.c.
1028	—Steel billets......	When used in the manufacture of the seamless pipes, tubes and flues enumerated in tariff items 399 and 410d: no drawback shall be paid under this item when the pipes, tubes and flues enumerated in Tariff items 399 and 410d are dutiable under the General Tariff of Schedule A to this Act......	99 p.c.

NOMINAL ROLL OF PARTICIPANTS IN PUBLIC SITTINGS

Acton, Corporation of the Town of	Acton, Ont.
Algoma Steel Corporation, Limited	Sault Ste. Marie, Ont.
Allied Ironfounders Limited	London, England
Anthes-Imperial Company Limited, The	St. Catharines, Ont.
Armco Drainage & Metal Products of Canada Ltd.	Guelph, Ont.
Atlas Steels Limited	Welland, Ont.
Bolton, John H.	Toronto, Ont.
Boyles Bros. Drilling Company Ltd.	Vancouver, B.C.
British American Oil Company Limited, The	Toronto, Ont.
Byers, A.M., Company	Pittsburgh, Pa.
Canada Iron Foundries, Limited	Montreal, Que.
Canadian Coupling & Fittings Limited	Simcoe, Ont.
Canadian Diamond Drilling Association	Toronto, Ont.
Canadian Institute of Plumbing and Heating	Montreal, Que.
Canadian Oil Companies, Limited	Toronto, Ont.
Canadian Petroleum Association	Calgary, Alta.
Canadian SKF Company Limited	Scarborough, Ont.
Canadian Western Pipe Mills Ltd.	Port Moody, B.C.
Chemical Resistant Services Company	Toronto, Ont.
Clay Cross (Iron & Foundries) Ltd.	Near Chesterfield, England
Crane Limited	Montreal, Que.
Dominion Natural Gas Company, Limited	Buffalo, N.Y.
Dunlop Canada Limited	Toronto, Ont.
Fischer Bearings (Canada) Ltd.	Toronto, Ont.
Ford Motor Company of Canada, Limited	Toronto, Ont.
Inglis, John, Co. Limited	Ottawa, Ont.
Imperial Oil Limited	Toronto, Ont.
International Nickel Company of Canada, Limited, The	Toronto, Ont.
Interprovincial Pipe Line Company	Toronto, Ont.
Interprovincial Utilities Limited	Ottawa, Ont.
Ladish Co. of Canada Ltd.	Brantford, Ont.
Lakeland Natural Gas Limited	Toronto, Ont.
Longueuil, City of	Longueuil, Que.
Mannesmann Tube Company, Ltd.	Sault Ste. Marie, Ont.
McKinnon Industries Limited	St. Catharines, Ont.
Midwest Mining Supplies Limited	Winnipeg, Man.
Oakton Products Limited	Scarborough, Ont.
Page-Hersey Tubes, Limited	Toronto, Ont.
Public Utilities Commission of Galt	Galt, Ont.
Public Utilities Commission	Woodstock, Ont.
Stanton Ironworks Company Limited, The	Near Nottingham, England
Standard Tube and T.I. Limited	Woodstock, Ont.
Staveley Iron & Chemical Company Limited, The	Near Chesterfield, England
Steel Company of Canada, Limited, The	Hamilton, Ont.
Stewarts and Lloyds of Canada Limited	Toronto, Ont.
South Durham Steel & Iron Co., Ltd.	Middlesbrough, England
Taylor Forge & Pipe Works of Canada, Ltd.	Hamilton, Ont.
Timken Roller Bearing Company	St. Thomas, Ont.
Trans-Canada Pipe Lines Limited	Calgary, Alta.
Tube Investments Limited	Birmingham, England
Tube Turns of Canada Limited	Chatham, Ont.
Warden King Limited	Montreal, Que.

STATISTICS OF IMPORTS, EXPORTS, AND PRODUCTION OF PIPES AND TUBES OF IRON OR STEEL

The following import statistics are compiled on two bases:

(a) Dominion Bureau of Statistics import classifications, as shown in *Trade of Canada: Imports.* These are related to tariff items dealing with pipes and tubes, although they do not coincide exactly in many instances; with two exceptions, values only are available.

(b) the American Iron and Steel Institute's (AISI) definitions as applied by the D.B.S., and published in *The Primary Iron and Steel Industry.*

Canadian production data corresponding to tariff items 397(a), (b), (c), 398, 399, and 848 are from Part II of Page-Hersey Tubes, Limited's brief on Reference 119. In a number of instances the figures for production do not correspond precisely with the tariff classifications. It is felt, however, that they do give a useful indication of production of the products described in the various tariff items.

Canadian production data for tariff items 396, 396a and 400 are from two D.B.S. publications: *The Iron Castings Industry* (annual) and December (monthly) issues of *Iron Castings and Cast Iron Pipes and Fittings.*

Export data are from D.B.S., *Trade of Canada: Exports.*

For 1955, duty free imports under dutiable tariff items are not extracted.

SUMMARY: PIPES AND TUBES OF IRON OR STEEL[1]

(tons of 2000 lbs.)

Year	Total Imports	Total Canadian Production	Total Exports[2]	Domestic Disappearance	Imports as Percentage of D.D.
1937	n.a.	99,121	n.a.[3]	—	—
1948	68,014	143,916	5,146	206,784	32.9
1950	189,008	244,400	7,867	425,541	44.4
1951	152,757	260,547	7,070	406,234	37.6
1952	256,599	277,724	5,185	529,138	48.5
1953	266,634	234,696	2,980	498,350	53.5
1954	294,586	238,389	2,062	530,913	55.5
1955	165,197	332,747	5,649	492,295	33.5

[1] Excluding cast iron pipe; excluding iron and steel pipe fittings.
[2] Of both Canadian and foreign produce.
[3] Exports in 1937 were valued at $932,116. Tonnage is not available.

Pipe, cast, valued at not more than five cents per pound (Tariff item 396—s.c. 5181)

Imports: based on Canadian Customs Definitions

(tons of 2000 lbs.)

Source	1937	1948	1949	1950	1951	1952	1953	1954	1955
United Kingdom	56	4,019	4,385	12,006	18,390	15,516	23,089	31,072	20,447
United States	49	63	—	830	391	2	30	256	144
Other	226	—	—	—	—	28	2	37	485
Total	331	4,082	4,385	12,836	18,781	15,546	23,121	31,365	21,076

Imports and Production

(tons of 2000 lbs.)

Year	1. Imports[1]	2. Production	Total of 1+2	Imports as Percentage of Total
1948	4,082	87,093	91,175	4.47
1950	12,836	88,635	101,471	12.64
1951	18,781	101,650	120,431	15.50
1952	15,546	71,630	87,176	17.80
1953	23,121	91,580	114,701	20.10
1954	31,365	103,550	134,915	23.24
1955	21,076	119,225	140,301	15.02

[1] Imports for 1948 to 1952, inclusive, may include some tonnages of soil pipe, as well as pressure pipe; figures for subsequent years are thought to consist largely of imports of cast iron pressure (water) pipe.

Pipe, cast, n.o.p.[1] (Tariff item 396a—s.c. 5182)

Imports: based on Canadian Customs Definitions

(tons of 2000 lbs.)

Source	1937	1948	1949	1950	1951	1952	1953	1954	1955
United Kingdom	3	670	117	105	465	634	3,241	2,775	3,962
United States	28	537	217	281	612	1,260	1,134	622	362
Other	15	—	—	—	259	113	5	—	6
Total	46	1,207	334	386	1,336	2,007	4,380	3,397	4,330
Duty Free Imports									
United States	—	—	1	—	—	—	21	—	—
Alaska	—	—	—	—	—	—	—	13	—

Imports and Production

(tons of 2000 lbs.)

Year	1. Imports	2. Production	Total of 1+2	Imports as Percentage of Total
1948	1,207	29,159	30,366	3.97
1950	386	32,700	33.086	1.16
1951	1,336	30,000	31,336	4.26
1952	2,007	37,200	39,207	5.11
1953	4,380	39,200	43,580	10.05
1954	3,634	45,400	49,034	7.41
1955	4,330	43,500	47,830	9.05

[1] It is thought that the major portion of imports under this tariff item consists of cast iron soil pipe.

Pipes and tubes, wrought, plain or coated:—Welded or seamless, with plain or processed ends, not more than 10½ inches in diameter, n.o.p. (Tariff item 397(a)—s.c. 5188)

Imports: based on Canadian Customs Definitions
(dollars)

Source	1937	1948	1949	1950	1951	1952	1953	1954	1955
United Kingdom	68,905	258,147	657,403	2,376,758	2,114,201	2,775,167	2,787,518	1,834,030	1,837,142
United States	233,321	4,526,389	6,833,472	2,226,734	7,534,327	5,625,093	4,685,588	3,819,826	4,610,731
Belgium and Luxembourg	—	12,914	7,290	51,313	73,793	26,390	14,949	20,889	22,102
Germany	—	—	—	8,016	6,425	53,197	30,834	334,903	56,969
Other	4,617	6,433	23,237	6,387	179,005	16,088	32,608	68,789	148,920
Total	306,843	4,803,883	7,521,402	4,669,208	9,907,751	8,495,938	7,551,497	6,078,437	6,675,864
Duty Free Imports									
United Kingdom	—	—	2,276	110,926	41,657	37,641	43,334	354,647	—
United States	—	261,250	292,338	102,241	384,556	361,338	490,017	488,243	—
Alaska	—	—	—	—	—	—	—	1,425	—

Imports (on AISI basis) and Production

(tons of 2000 lbs.)

Year	1. Imports[1]	2. Production[2]	Total of 1+2	Imports as Percentage of Total
1948	17,188	n.a.	n.a.	n.a.
1950	27,442	n.a.	n.a.	n.a.
1951	31,041	242,319	273,360	11.3
1952	42,077	237,043	279,120	15.1
1953	35,828	219,970	255,798	14.0
1954	32,414	204,777	237,191	13.7
1955	34,882	267,658	302,540	11.5

[1] Imports of seamless pipes and tubes, 12″ and under in diameter, hot finished, plus welded pipes and tubes 4″ and under in diameter.
[2] Page-Hersey estimate.

Pipes and tubes, wrought, plain or coated:—Welded or seamless, with plain or processed ends, more than $10\frac{1}{2}$ inches in diameter, n.o.p. (Tariff item 397(b)—s.c. 5187)

Imports: based on Canadian Customs Definitions

(dollars)

Source	1937	1948	1949	1950	1951	1952	1953	1954	1955
United Kingdom	65,746	763,918	724,521	791,253	2,222,800	1,731,255	940,372	736,156	211,719
United States	143,278	598,094	685,731	12,705,812	1,182,869	14,277,499	14,674,217	15,950,169	2,880,439
Germany	—	—	—	—	11,667	—	—	1,541	1,263
Other	362	—	—	—	—	—	1,088	7,444	—
Total	209,386	1,362,012	1,410,252	13,497,065	3,417,336	16,008,754	15,615,677	16,695,310	3,093,421
Duty Free Imports									
United Kingdom	—	—	—	—	—	—	—	1,272	—
United States	—	2,591	721	1,939	8,174	4,582	11,985	21,086	—
Netherlands	—	—	—	—	—	6,583	—	—	—
Germany	—	—	—	—	—	—	—	58,131	—
Alaska	—	—	—	—	—	—	—	20,716	—

Imports (on AISI basis) and Production

(tons of 2000 lbs.)

Year	1. Imports[1]	2. Production[2]	Total of 1+2	Imports as Percentage of Total
1948	10,716	n.a.	n.a.	n.a.
1950	111,059	n.a.	n.a.	n.a.
1951	24,990	11,345	36,335	68.8
1952	110,384	22,045	132,429	83.3
1953	106,254	12,300	118,554	89.6
1954	135,317	32,702	168,019	80.5
1955	15,781	54,472	70,253	22.5

[1] Imports of seamless pipe and tubes, over 12″ in diameter, hot finished, plus welded pipe over 4″ in diameter.
[2] Page-Hersey estimate.

SUMMARY: PIPES AND TUBES OF IRON OR STEEL—*Con.*

Pipes and tubes, wrought, plain or coated, not joined, with plain ends, not more than $2\frac{1}{2}$ inches in diameter, n.o.p. (Tariff item 397(c)—s.c. 5185)

Imports: based on Canadian Customs Definitions
(dollars)

Source	1937	1948	1949	1950	1951	1952	1953	1954	1955
United Kingdom	159	854	1,519	15,508	16,755	5,787	5,998	1,015	623
United States	27,107	85,589	44,811	78,601	125,721	115,087	40,223	32,747	91,747
Belgium and Luxembourg	8,740	—	—	—	2,115	—	—	—	1,431
Other	—	—	—	1,749	7,028	—	—	2,961	1,241
Total	36,006	86,443	46,330	95,858	151,619	120,874	46,221	36,723	95,042
Duty Free Imports									
United Kingdom	—	—	2,256	—	1,826	102	—	—	—
United States	—	17,373	12,168	—	5,692	—	—	23,875	—

Imports (on AISI basis) and Production

Year	Imports	Production (dollars)
1948	Included under tariff item 397(a)	n.a.
1950		n.a.
1951		52,519
1952		21,491
1953		12,885
1954		13,535
1955		n.a.

Pipes and tubes, wrought, plain or coated:—n.o.p. (Tariff item 397(d)—s.c. 5191)

Imports: based on Canadian Customs Definitions

(dollars)

Source	1937	1948	1949	1950	1951	1952	1953	1954	1955
United Kingdom	3,067	3,798	14,159	17,759	22,021	19,067	23,195	9,220	5,314
United States	68,017	356,039	516,154	743,898	1,341,234	1,313,187	769,338	669,370	1,681,952
Other	21,088	—	—	—	—	—	—	1,240	6,815
Total	92,172	359,837	530,313	761,657	1,363,255	1,332,254	792,533	679,830	1,694,081
Duty Free Imports									
United States	—	10,859	38,944	9,189	70,225	38,943	40,702	28,566	—
Alaska	—	—	—	—	—	—	—	346	—

Imports (on AISI basis) and Production

(tons of 2000 lbs.)

Year	Imports	Production
1948	—	
1950	3,428	It is understood
1951	2,676	that there is
1952	2,736	little or no
1953	7,389	production of
1954	9,222	"genuine" wrought
1955	2,898	iron pipe in Canada.

SUMMARY: PIPES AND TUBES OF IRON OR STEEL—*Con.*

Pipes and tubes, seamless, cold drawn, plain ends, valued at not less than five cents per pound, n.o.p.
(Tariff item 398—s.c. 5186)

Seamless tubing, valued at not less than five cents per pound, for the manufacture of roller bearings (9/4/52)
(Tariff item 398c—s.c. 5186)

Imports: based on Canadian Customs Definitions
(dollars)

Source	1937	1948	1949	1950	1951	1952	1953	1954	1955
United Kingdom	242,793	79,361	246,241	477,848	1,545,994	1,206,397	1,157,211	766,143	819,548
United States	390,202	1,844,368	2,356,206	1,536,191	1,663,509	2,192,367	1,931,489	2,045,881	5,261,130
Germany	7,106	—	—	—	8,614	39,477	3,803	177	2,741
Other	4,923	—	686	1,599	30,745	50,640	31,662	33,036	229,556
Total	645,024	1,923,729	2,603,133	2,015,638	3,248,862	3,488,881	3,124,165	2,845,237	6,312,975
Duty Free Imports									
United States	—	237,464	463,799	982,263	972,290	955,503	1,418,713	1,447,431	—
Sweden	—	—	—	43,657	86,699	99,506	100,260	251,926	—
Alaska	—	—	—	—	—	—	—	353	—

Imports (on AISI basis) and Production
(tons of 2000 lbs.)

Year	1. Imports[1]	2. Production[2]	Total of 1+2	Imports as Percentage of Total
1948	7,949	n.a.	n.a.	n.a.
1950	5,626	n.a.	n.a.	n.a.
1951	10,463	2,460	12,923	81.0
1952	9,868	2,375	12,243	80.6
1953	10,800	804	11,604	93.1
1954	10,269	146	10,415	98.6
1955	10,315	153	10,468	98.5

[1] Imports of seamless pipes and tubes, 12″ and under in diameter, cold drawn, for all purposes (other than for use in boilers).
[2] Seamless mechanical tubing, cold drawn.

Pipes and tubes, seamless, cold drawn, plain ends, polished, valued at not less than five cents per pound;[1] tubes, welded or seamless, more than $10\frac{1}{2}''$ in diameter, with plain ends, for manufacture or repair of rolls for paper-making machinery (Tariff item 398a—s.c. 5193)

Imports: based on Canadian Customs Definitions

(dollars)

Source	1937	1948	1949	1950	1951	1952	1953	1954	1955
United Kingdom	148	83,449	20,105	29,091	81,378	32,601	30,483	34,975	18,175
United States	417	23,719	36,897	34,511	23,263	9,479	5,215	9,106	32,595
Total	565	107,168	57,002	63,602	104,641	42,080	35,698	44,081	50,770
Duty Free Imports									
United States	—	1,658	1,020	—	7,322	3,441	115	70	—

Imports (on AISI basis) and Production

Imports	Production
Included under tariff item 398	See tariff item 398.

[1] Prior to 1937 all wording after the ";" did not appear.

Tubing, not joined, not more than 5/16 inch in diameter, with one end swaged, or swaged, split and spread, but not further manufactured, for use in the manufacture of fishing rods (Tariff item 398b—s.c. 5194)

Imports: based on Canadian Customs Definitions

(dollars)

Source	1937	1948	1949	1950	1951	1952	1953	1954	1955
United Kingdom	823	—	—	—	—	—	—	—	—
United States	368	3,873	23,584	4,988	681	—	1,532	4,824	817
Total	1,191	3,873	23,584	4,988	681	—	1,532	4,824	817

Imports (on AISI basis) and Production

Not available

SUMMARY: PIPES AND TUBES OF IRON OR STEEL—*Con.*

Pipe, seamless, not further manufactured than cut to length and formed or bent to shape; pipe caps, not further manufactured than formed or bent to shape, for the manufacture of butt-welding fittings (Tariff item 398d—s.c. 5197)

Imports: based on Canadian Customs Definitions
(dollars)

Source	1937	1948	1949[1]	1950	1951	1952	1953	1954	1955
United Kingdom	—	—	—	3,034	3,748	—	4,018	32,885	23,088
United States	—	—	23,819	297,481	315,988	548,674	418,168	562,891	593,387
Total	—	—	23,819	300,515	319,736	548,674	422,186	595,776	616,475

[1] Imports shown for 1949 are from August 1, 1949.

Imports (on AISI basis) and Production
Not available

Pipes, tubes and flues, wrought, iron or steel, with plain, swelled, or thickened ends, for the manufacture or repair of pressure parts of boilers, pulp mill digesters and vessels for the refining of oil (Tariff item 399—s.c. 5183)

Imports: based on Canadian Customs Definitions
(dollars)

Source	1937	1948	1949	1950	1951	1952	1953	1954	1955
United Kingdom	285,536	153	403,575	263,341	829,452	1,014,974	636,520	893,612	974,446
United States	488,146	2,330,570	3,404,306	1,446,259	1,661,890	3,080,222	2,388,297	1,725,844	1,967,230
Sweden	12,068	—	2,833	—	30,018	60,531	63,850	9,724	51,608
Other	19,236	—	—	—	69,907	14,019	—	49,620	55,071
Total	808,581	2,330,723	3,810,714	1,709,600	2,591,267	4,169,746	3,088,667	2,678,800	3,048,355

Imports (on AISI basis) and Production
(tons of 2000 lbs.)

Year	1. Imports	2. Production	Total of 1+2	Imports as Percentage of Total
1948	12,382	n.a.	n.a.	n.a.
1950	7,032	n.a.	n.a.	n.a.
1951	12,242	3,951	16,193	75.6
1952	17,567	3,891	21,458	81.9
1953	10,348	580	10,928	94.7
1954	8,519	764	9,283	91.8
1955	9,158	1,850	11,008	83.2

Pipes and tubes, wrought, brass covered, not more than 3 inches in diameter, and brass trimmings, not polished, lacquered or otherwise manufactured, for the manufacture of iron or brass bedsteads (Tariff item 399a—s.c. 5184)

Imports: based on Canadian Customs Definitions

(dollars)

Source	1937	1948	1949	1950	1951	1952	1953	1954	1955
United States	235	—	—	—	—	—	—	—	—
Total	235	—	—	—	—	—	—	—	—

Imports (on AISI basis) and Production

(tons of 2000 lbs.)

Year	Imports	Production
1948	81	Not available
1950	341	
1951	548	
1952	171	
1953	47	
1954	2	
1955	21	

SUMMARY: PIPES AND TUBES OF IRON OR STEEL—*Con.*

Tubing, wrought, not more than ½ inch in diameter, in lengths not less than six feet, coated with metal, other than zinc, not polished, bent nor further manufactured, imported by manufacturers to be further processed (Tariff item 399b—s.c. 5190)

Imports: based on Canadian Customs Definitions

(dollars)

Source	1937	1948	1949	1950	1951	1952	1953	1954	1955
United Kingdom	—	—	1,122	—	—	1,726	1,687	—	—
United States	10,913	20,338	45,898	117,552	145,218	126,035	169,231	149,662	247,288
Total	10,913	20,338	47,020	117,552	145,218	127,761	170,918	149,662	247,288
Duty Free Imports									
United States	—	—	1,826	14,420	9,202	5,072	2,291	1,405	—

Imports (on AISI basis) and Production

(tons of 2000 lbs.)

Year	Imports	Production
1948	183	—
1950	434	—
1951	474	—
1952	584	—
1953	351	—
1954	260	—
1955	309	—

Pipes and tubes, not exceeding two inches in diameter, of puddled iron, for recovering petroleum; Apparatus and complete parts for producing oil from shales and oil-sands; Apparatus and parts for petroleum and natural gas wells, potash, and rock salt mines.
(Tariff items 399c, 410d and 848—s.c. 5195)

Imports: based on Canadian Customs Definitions

(dollars)

Source	1937	1948	1949	1950	1951	1952	1953	1954	1955
United Kingdom	—	—	2,287	779,426	1,200,004	1,927,150	1,726,393	2,617,407	1,847,074
United States	—	3,955,847	8,182,402	5,829,675	11,184,484	9,369,915	12,483,896	11,680,756	10,808,143
Germany	—	—	—	127,877	267,208	503,694	993,835	1,171,233	643,256
Belgium and Luxembourg	—	—	23,703	24,931	1,062,058	273,284	406,148	247,632	459,401
Other	—	—	146,445	—	103,495	976,593	1,079,178	2,808,021	6,105,830
Total	—	3,955,847	8,354,837	6,761,909	13,817,249	13,050,636	16,689,450	18,525,049	19,863,704

Imports (on AISI basis) and Production

(tons of 2000 lbs.)

Year	1. Imports[1]	2. Production[1]	Total of 1+2	Imports as Percentage of Total
1948	19,515	n.a.	n.a.	n.a.
1950	33,646	n.a.	n.a.	n.a.
1951	70,323	472	70,795	99.3
1952	73,212	12,370	85,582	85.5
1953	95,617	1,042	96,659	98.9
1954	98,583	—	98,583	100.0
1955	91,833	193	92,026	99.8

[1] Oil well casing only.

SUMMARY: PIPES AND TUBES OF IRON OR STEEL—*Con.*

Fittings and couplings of iron or steel, of every description, for iron or steel pipes and tubes; complete parts thereof (Tariff item 400—s.c. 5192 and 5196)

Imports: based on Canadian Customs Definitions
(dollars)

Source	1937	1948	1949	1950	1951	1952	1953	1954	1955
United Kingdom	11,436	1,875	4,044	54,827	281,148	511,512	581,577	475,596	598,121
United States	482,153	2,514,141	2,460,312	3,043,797	4,457,574	6,226,273	5,592,665	5,054,345	5,244,549
Germany	—	—	—	2,396	32,613	20,327	90,702	160,105	294,692
Other	3,067	—	—	—	1,248	3,013	100,869	147,441	344,825
Total	496,656	2,516,016	2,464,356	3,101,020	4,772,583	6,761,125	6,365,813	5,837,487	6,482,187
Duty Free Imports									
United Kingdom	—	—	—	—	—	3,037	973	269	—
United States	—	67,774	46,258	54,772	89,476	100,986	81,683	45,931	—
Sweden	—	—	—	—	—	1,000	—	—	—
Alaska	—	—	—	—	—	—	—	33,963	—

Imports (on AISI basis) and Production
(tons of 2000 lbs.)

Year	1. Imports	2. Production	Total of 1+2	Imports as Percentage of Total
1948	2,446	57,185	59,631	4.1
1950	3,072	53,265	56,337	5.4
1951	5,077	51,450	56,527	9.0
1952	7,229	40,970	48,199	15.0
1953	6,022	43,420	49,442	12.2
1954	5,571[1]	43,050	48,621	11.4
1955	6,311[1]	53,569	59,880	10.5

[1] Estimate.

Exports of Pipe Fittings of Iron or Steel[1]
(dollars)

1937[2]	1948	1950	1951	1952	1953	1954	1955
186,335	1,209,156	530,859	809,900	667,348	326,272	237,550	268,714

[1] Of both Canadian and foreign produce.
[2] Canadian produce only. Exports (foreign produce) of pipes, tubes, and pipe fittings in 1937 (not available separately) amounted to $3,477.

FREIGHT RATES

The rates used in this appendix are those in force on September 1, 1956. Possibly the only exceptions are the agreed charges for "oil-country goods" from Port Moody, B.C., which are operative from December 27, 1956.

While these rates include the interim rail freight increase of 7 per cent, effective July 3, 1956, they do not include the 4 per cent general interim increase authorized in December.

The rates cover all forms of transportation which are factors in the movement of pipes or tubes. The symbol following each rate in the tables indicates the particular form of transport involved as follows:

[1] Carload, rail
[2] Less than carload, rail
[3] Truckload
[4] Boat
[5] Boat and rail
[6] Pool car, rail
[7] Less than truckload

FREIGHT RATES TO CHIEF CANADIAN MARKETS

Welded and Seamless Steel Pipe

(Excluding oil-country goods)

(cents per 100 lbs.)

From:	Montreal	Welland	Sault Ste. Marie	Port Moody B.C.	Fairless Penn.	Pittsburgh Penn.	Youngstown Ohio	Lorain Ohio	Chicago	Provo Utah	Napa Calif.	United Kingdom
To: Halifax........	74[1]	107[1]	—	—	131[1]	152[1]	—	146[1]	—	—	—	73–79[4]
Saint John.....	71[1]	104[1]	—	—	114[1]	—	—	129[1]	—	—	—	73–79[4]
Quebec City...	27[1]	104[1]	—	—	106[1]	119[1]	—	—	—	—	—	—
	32[4]	—	—	—	—	—	—	—	—	—	—	—
	40[3]	—	—	—	—	—	—	—	—	—	—	73–79[4]
Montreal......	—	52[4]	—	—	95[1]	106[1]	—	—	—	—	—	—
	—	54[1]	—	—	—	—	—	—	—	—	—	—
	—	64[3]	—	—	—	—	—	—	—	—	—	73–79[4]
Oshawa.......	68[1]	43[1]	—	—	—	86[1]	—	—	—	—	—	—
	71[3]	43[3]	—	—	—	—	—	—	—	—	—	—
Toronto.......	31[4]	29[1]	—	—	—	82[1]	76[1]	—	—	—	—	—
	34[1]	—	—	—	—	—	—	—	—	—	—	—
	50[3]	—	—	—	—	—	—	—	—	—	—	105[4]
Hamilton......	38[4]	19[1]	—	—	—	81[1]	74[1]	81[1]	—	—	—	—
	73[1]	19[3]	—	—	—	—	—	—	—	—	—	—
Windsor.......	84[4]	56–63[1]	—	—	—	—	—	58[1]	—	—	—	—
	87[1]	56[3]	—	—	—	—	—	—	—	—	—	—
Winnipeg......	147[5]	147[5]	153[1]	—	—	—	—	—	150[1]	213[1]	213[1]	237[5]
	154[1]	132 (over 20″)[1]	—	—	—	—	—	—	—	—	—	—
	—	154 (to 20″)[1]	—	—	—	—	—	—	—	—	—	—
Regina........	202[1]	189–202 (to 20″)[1]	219[1]	—	—	—	—	—	181[1]	232[1]	232[1]	285[5]
	—	294 (over 20″)[1]	—	—	—	—	—	—	—	—	—	—
Calgary.......	235–242[1]	235–244[1]	261[1]	107[1]	—	—	—	277[1]	230[1]	180[1]	180[1]	226[5]
Edmonton.....	252–259[1]	252–262 (to 5″)[1]	261[1]	124[1]	—	—	—	299[1]	238[1]	206[1]	206[1]	245[5]
	—	239–246 (6″ to 20″)[1]	—	—	—	—	—	—	—	—	—	—
	—	369 (over 20″)[1]	—	—	—	—	—	—	—	—	—	—
Vancouver.....	110[1]	110[1]	—	—	—	—	—	—	180[1]	100[1]	92[1]	83[4]

FREIGHT RATES TO CHIEF CANADIAN MARKETS

Cast Iron Water Pipe and Fittings

(cents per 100 lbs.)

From:	Trois Rivieres	Toronto	Winnipeg	United Kingdom
To: Saint John	71[1]	—	—	75 to 91[4]
Quebec City	23[3]	—	—	75 to 91[4]
Montreal	25[3]	—	—	75 to 91[4]
Toronto	73[1]	—	—	—
Winnipeg	163[1]	154[1]	—	—
Saskatoon	225[1]	215[1]	88[1]	248 to 261[5]
Vancouver	118[1]	110[1]	—	84 to 97[4]

FREIGHT RATES TO CHIEF CANADIAN MARKETS

Electric-Welded Steel Tubing

(cents per 100 lbs.)

From:	Welland	Woodstock	Detroit	Buffalo	New York	Chicago	Milwaukee	United Kingdom
To: Halifax	107[1]	146[1]	—	—	129[1]	—	—	73 (under 4")[4]
	—	179[2]	—	—	—	—	—	79 (4" to 8")[4]
	—	187[3]	—	—	—	—	—	—
Saint John	104[1]	142[1]	—	—	110[1]	—	—	73 (under 4")[4]
	—	—	—	—	—	—	—	79 (4" to 8")[4]
Quebec City	104[1]	—	—	—	—	—	—	73 (under 4")[4]
	—	—	—	—	—	—	—	79 (4" to 8")[4]
Montreal	52[4]	85[1]	—	—	—	—	—	73 (under 4")[4]
	54[1]	136[2]	—	—	—	—	—	79 (4" to 8")[4]
	64[3]	—	104[3]	89[3]	—	—	—	—
Oshawa	43[1]	59[3]	66[3]	55[3]	—	—	—	—
	—	63[1]	—	—	—	—	—	—
	—	82[2]	—	—	—	—	—	—
Toronto	29[1]	40[3]	63[3]	43[3]	—	—	—	105[4]
	—	54[1]	71[1]	—	—	—	—	—
	—	74[2]	83[2]	—	—	—	—	—
Hamilton	19[1]	32[3]	58[3]	43[3]	—	—	—	—
	—	44[1]	—	—	—	—	—	—
	—	55[2]	—	—	—	—	—	—
Windsor	56[1]	44[3]	15[3]	68[3]	—	—	—	—
	—	60[1]	30[1]	—	—	—	—	—
	—	83[2]	46[2]	—	—	—	—	—
Winnipeg	147[5]	154[1]	—	—	—	150[1]	150[1]	—
	154[1]	—	—	—	—	—	—	—
Regina	195[5]	202[1]	—	—	—	181[1]	189[1]	—
	202[1]	—	—	—	—	—	—	—
Edmonton	252[5]	262[1]	—	—	—	238[1]	263[1]	245[5]
	259[1]	—	—	—	—	—	—	—
Calgary	235[5]	262[1]	—	—	—	230[1]	244[1]	226[5]
	242[1]	—	—	—	—	—	—	—
Vancouver	110[1]	110[1]	—	—	—	180[1]	180[1]	83[4]

FREIGHT RATES TO CHIEF CANADIAN MARKETS

Cast-Iron Soil Pipe and Fittings

(cents per 100 lbs.)

From:	Montreal	Oakville	Galt	St. Catharines	Buffalo	Birmingham Ala.	Winnipeg	Edmonton	Vancouver	United Kingdom
To: Halifax.........	74(4″ and over)[1]	—	104 (4″ and over)[1]	104 (4″ and over)[1]	138[1]	211[1]	—	—	—	73[4]
	92 (under 4″)[1]	—	122 (under 4″)[1]	128 (under 4″)[1]	—	—	—	—	—	—
Montreal.......	—	—	—	75[3]	88[1]	160[1]	—	—	—	73[4]
Toronto........	57[3]	36[3]	50[3]	28[3]	52[1]	145[1]	—	—	—	96[4]
Winnipeg.......	147[5]	—	—	147[5]	183[1]	189[1]	—	—	—	—
	154[1]	—	—	154[1]	—	—	—	—	—	—
Regina.........	195[5]	—	—	—	221[1]	220[1]	75[1]	—	—	—
	202[1]	—	—	—	—	—	—	—	—	—
Edmonton......	—	—	—	—	304[1]	304[1]	129[1]	—	126[1]	210[5]
Calgary........	255[5]	—	—	—	295[1]	295[1]	—	54[1]	110[1]	194[5]
	262[1]	—	—	—	—	—	—	—	—	—
Vancouver......	256[1]	—	—	—	204[1]	193[1]	215[1]	126[1]	—	84[4]

FREIGHT RATES TO CHIEF CANADIAN MARKETS

Pipe Fittings

(cents per 100 lbs.)

From:	Montreal	Hamilton	Ridgetown	Simcoe	Calgary	Chicago	Pittsburgh
To: Halifax	123[2]	—	168[1]	—	—	—	271[2]
	—	—	205[2]	—	—	—	—
Quebec City	96[2]	—	154[1]	—	—	—	190[2]
	88[7]	—	176[7]	—	—	—	—
	—	—	189[2]	—	—	—	—
Montreal	—	88[3]	128[1]	80[1]	—	172[3]	106[1]
	—	119[2]	157[2]	124[7]	—	221[7]	165[2]
Toronto	107[7]	32[3]	67[1]	—	—	128[3]	122[2]
	116[2]	54[2]	75[3]	—	—	164[7]	—
	—	—	82[2]	—	—	—	—
Winnipeg	181[6]	195[6]	231[1]	—	220[2]	261[3]	—
	285[2]	—	285[2]	—	—	—	—
Edmonton	291[6]	305[6]	368[1]	—	81[2]	372[6]	—
	453[2]	—	453[2]	—	—	503[7]	—
Vancouver	275–286[6]	275–286[6]	361[6]	246[6]	184[2]	400[2]	204[1]

FREIGHT RATES TO CHIEF CANADIAN MARKETS

Oil-Country Goods

(cents per 100 lbs.—carload lots)

From:	Welland	Sault Ste. Marie	Port Moody, B.C.	Lorain, Ohio	Chicago
To: Regina	123	102	96	—	181
Edmonton	161	139	69	299	238
Calgary	161	139	60	277	230

The following is the text of a letter received from The Petroleum and Natural Gas Conservation Board, Province of Alberta:

December 21, 1956.

Re: Pipes & Tubes

Your Reference No. 119

Relative to your letter of November 12th regarding restrictions placed by this Board upon the use of electric welded casing in Alberta, the factors influencing the Board's policy have been reviewed in the light of experience in the Province during the last year or so and experience of the industry in the United States.

There is a decided preference in industry for seamless pipe for well casing and I think this stems from the poor quality of welded pipe supplied in the post-war years. Originally the Board only permitted its use in shallow wells but as the quality improved, has approved its use in deeper wells. The Board now feels that it is not justified in restricting the use of all makes of welded pipe.

The Board has received reliable evidence as to the satisfactory performance of electric welded casing produced by the A. O. Smith Corporation of Milwaukee and as a result will approve its use in casing strings in accordance with the recommended practices of the manufacturer. Although the A. O. Smith Corporation has not applied to the American Petroleum Institute for grading of its products, the Board has been informed that this company's casing has been extensively used under severe conditions of depth, pressure and corrosion in various United States oil and gas fields. I might say, however, that the A. O. Smith Corporation claims that its process and facilities for manufacturing electric welded casing are absolutely unique.

The Board has decided to adopt the standards and specifications of the American Petroleum Institute as set forth in its publications STD-5A and 5C2 which provide for the use of welded casing under moderate conditions. It will also approve the use of casing where there is good evidence that it is equivalent to A.P.I. grades but it reserves the right to refuse to approve any make whether welded or seamless where experience dictates that the product is unsatisfactory.

While the Board is prepared to accept the A.P.I. rating for all makes of welded casing including those manufactured in Canada, it also considers the experience and judgment of members of the oil and gas industry to be extremely important in the choice of casing to be used under the various conditions to be found in Alberta. For this reason the Board urges that no action should be taken which would induce operators to use welded casing in place of seamless due to economic considerations. The Board makes this request recognizing the danger to human life and property that may result from failures in casing used in the completion of oil or gas wells.

Yours very truly,

(Signed) I. N. McKINNON,
Chairman

EDMOND CLOUTIER, C.M.G., O.A., D.S.P.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1957